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The Nebraska State Medical Journal

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Volume XVIII
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EARLY DIAGNOSIS OF CARCINOMA OF THE CERVIX*

HENRY SCHMITZ, M. D.,
Chicago, Ill.

The incidence of cancer of the cervix is about 3 or 4 per cent of all gynecological diseases. But of all organs the uterus is most frequently invaded by cancer with the exception of the stomach which, however, is a bisexual organ.

If we wish to control cancer, the red plague, we must find it, as a cancer has grown for some time before it causes symptoms. If we could diagnose it during this silent stage and then apply immediate and adequate treatment for its removal, the control of cancer would be achieved and the death rate would probably decrease from 40 to 50 per cent. Early diagnosis depends upon the carefulness with which we examine every patient that comes to us at the first office visit with the idea that a silent carcinoma may be found. The examination should be a painstaking one. Complete inspection of the entire body from head to foot, and exploration of all accessible body channels with the naked eye or, if necessary, with the aid of endoscopes should be made.

Inaccessible organs as the lungs, the gastrointestinal tract and the urogenital system, of course, cannot be investigated by direct inspection and palpation. However, these various organs present certain symptoms which indicate exploration with the x-rays. A dry cough without any auscultatory signs may be the first sign of a tumor formation in the lung or chest cavity and necessitates an immediate x-ray examination. Difficulty in deglutition requires x-ray and endoscopic examination of the esophagus. Sudden loss of appetite without any history of preceding chronic disturbances in digestion and absence of evidences of acute inflammation may mean cancer of the stomach. An exploration of the stomach must be made without delay by the x-ray and opaque meal. Bleeding from the rectum necessitates digital and proctoscopic exploration. Blood in the urine requires cystoscopy. If we were only cancer minded and subjected patients to a searching examination to rule out or in carcinoma, prognosis and results of treatment would be much more favorable. The surgical and radiolgical methods of treatment have been technically so perfected that further progress may not be expected. Improvement in the treatment of cancer can only come through early diagnosis, especially during the symptomless or silent stage. Hence the general practitioner will have to bear the responsibility for early diagnosis.

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*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, Nebr., May 24-26, 1932.

The subject of my address is confined to the "Early Diagnosis of Carcinoma of the Cervix." There are several general rules which we should recall. I am certain you are familiar with these rules, but "repetition is the mother of the student," and the oftener we repeat these rules the more they become part of our daily work.

1. Cancer does not grow in healthy tissues or organs.

2. Cancer begins in a spot or focus, the cells of which at first are not malignant or atypic, but of an inflammatory nature.

3. Chronic mild irritations and low degree infections cause or work on these foci and produce the changes characteristic for malignancy.

4. All tumors must grow to some extent before causing symptoms.

5. The discovery of cancer during this symptomless silent period and the immediate application of adequate treatment would put us in the control of the disease.

6. If physicians became cancer minded, i. e., would keep in mind the possibility of malignant disease in chronic tissue changes, then diagnoses would be rendered without delay.

7. The avoidable delay by the physician, i. e., placing the patient under observation instead of making an immediate diagnosis and applying treatment forthwith if cancer is found, is responsible for the poor end results of treatment.

8. It seems highly probable that the first stage of cancer of the cervix proceeds from a chronic cervicitis which presents either papillary erosions or follicular nodes and results from an inflammatory exudate which is not sufficiently fulminent to destroy the epithelial layer but to cause the cells to proliferate forming papillary erosions or Nabothian cysts. Hence prophylaxis means treatment of chronic cervicitis.

THE PROPHYLAXIS OF CARCINOMA OF THE CERVIX

We may, therefore, conclude that cancer of the cervix is as a rule preceded by a chronic cervicitis and that eradication of the chronic inflammatory changes would prevent the occurrence of cancer. This is indeed the fact. The following citations are noteworthy:

Bossi, in 1913, discussed the true prophylaxis of uterine carcinomata and stated that chronic ulcers of the cervix and hyperplasia of the endometrium were precursors of carcinoma. The diseased part of the cervix was removed by a low circular amputation and the hyperplastic endometrium by curettement. Bossi did not observe a single cancer after many years of follow-up in about 7,000 cases.

Pemberton and Smith subjected all cervical tissue removed by operation to a systematic microscopic examination and found that 2.39 per cent of the cervix cancers were found by such examinations. During a period of 52 years 5,962 cases of chronic cervicitides were treated: 3,814 cases with trachelorrhaphy; 740 cases with amputation; and 1,406 cases with the electrocaüter. Only 5 women developed cancer afterwards and these had been treated with trachelorrhaphy. They found in 669 carcinomata only 12 cases which had had a cervical plastique.

Hunner subjected 2,895 cases of chronic cervicitides treated with either amputation or cautery to observation for 10 years and not a single cancer developed.

These statistics show the superiority of amputation and cautery over trachelorrhaphy. The latter operation reshapes the cervix but does not remove all abnormal cells. The former operations probably prevent the development of cancer.

Hinselmann bases the diagnosis of chronic cervicitides on the following findings:

1. Normally the vaginal mucosa should end sharply and ringlike at the external os. Carcinoma is never seen in such cervices.

2. An extropic cylindrical cell mucosa does not predispose to carcinoma if the normal relations between vaginal and canal mucosae are maintained though they are misshaped. Ectropion is usually due to a laceration without subsequent infection.

3. If a cervical erosion becomes chronic or heals then a transition zone between the vaginal and canal mucous membranes forms indicated by nodules (ovula Nabothi) or ulcers (papillary erosions) the cells of which may become or have become atypic, hence precursors of carcinoma. Hinselmann found condition (1) in about 20 per cent; condition (2) in about 10 per cent; and condition (3), i. e., transition zones in

70 per cent of cervical examinations. Atypic changes in transition zones are composed (1) of keratinized surface cells termed leukoplakias, which can be seen with the colposcope, and (2) of desquamated areas devoid of hornified epithelium, and ulcerations which may be recognized by Schiller's iodine reaction as they do not take the iodine stain. Hinselmann saw in 100 cervices 70 with a transition zone (or matrix zone) and only two of these had either leukoplakia or ulceration, i. e., positive Schiller reactions.

It is in the latter group that carcinoma may be lurking. At any rate it is not possible to state the benign or malignant character of the lesions.

Schiller devised a simple test applicable in these conditions. Cancer cells do not contain glycogen, normal squamous epithelial cells do. Iodine causes a deep brown reaction with glycogen. Hence if a compound solution of iodine is applied to a cervix and the vaginal portion stains a uniformly deep brown we may state that cancer of the vaginal portion is not present. If a white area is found then one of the following conditions may be present:

(1) Carcinoma: (2) erosion; (3) loss of surface epithelium due to trauma as may be caused by rough handling or instrumentation; (4) ectropion of the cylindrical cell mucosa of the cervical canal; (5) luetic or rarely tuberculous ulceration; and (6) leukoplakia. In the presence of such stainless patches after the iodine applications tissue should be removed with a sharp curette and subjected to microscopic examination. Aplasia of the cells means cancer.

Erosions, ectropion and leukoplakia demand immediate attention. A careful cauterization with a nasal cautery snare heals most of these cases. Refractory behavior necessitates a circular low amputation of the portio if the pathology is confined to the vaginal surface layer and high conical amputation if the pathology involves the cervical canal mucosa. All the tissue removed should be subjected to serial sections and subsequent staining and microscopic examination of each slide for evidences of cellular atypia which almost always means incipient carcinoma.

THE DIAGNOSIS OF EARLY CANCER OF THE CERVIX

If one has seen a great number of cancers and studied the microscopic and clinical development then an orderly sequence in the development of the macroscopic, microscopic, physical and symptomatic features and their interdependence becomes quite apparent. These findings are very valuable as they facilitate diagnosis and enable one to use the method of treatment indicated.

The sequences in the microscopic development concern the cellular charactertistics, namely, (1) atypia; (2) the destruction of the basement membrane and the invasive tendencies; (3) the ulcerative breakdown due to necrosis the result of the poor blood-supply; and finally (4) the formation of local or distant metastases. An advanced carcinoma possesses all four stages, i. e., cell atypia, invasion, necrosis, metastases. However, one will concede that a histological diagnosis of cancer may be made without the evidence of metastases. Diagnosis is also justifiable in the absence of ulceration and necrosis, and it is still warranted in the absence of evidences of invasion and breaking through the basement membrane. Atypia is indicated by a blurring of the cell mass which may be clearly limited by a sharp and usually oblique line from the adjacent normal cells as has been shown by Schiller and Bailey. When atypia has occurred in the surface epithelium then the cell changes are irreversible and cancer has begun.

The first macroscopic appearance of a cancer of the cervix is a nodule. Should the cancer have everting tendencies then a papilloma forms, followed by the typical cauliflower growth with necrosis, and finally by a sloughing of this mass leaving a crater behind. Should the cancer have inverting tendencies then the nodular stage is followed by the ulcerative stage, this by the necrotizing stage, which termintes in the large crater.

The determination of the extent of the cancer. also, gives valuable evidences. A beginning cancer on palpation is freely movable and devoid of reactive inflammatory signs in the periphery. The uterus is normally movable. A pull on the cervix with a tenaculum forceps permits a displacement of the organ down to the introitus of the vagina without resistance and without disturbing the patient. As soon as cancer becomes actively growing then the base is indurated due to rootlike processes invading the surrounding tissue and an edema and reddening of the peripheral area; an edematous thickening is felt in the paracervical tissue. Local irritation with the examining finger or the phallus causes contact bleeding which may be so slight that the hemorrhage is not alarming. The mobility of the uterus is now limited or impeded due to loss of normal elasticity of the paracervical tissues. Next invasion of the parametria occurs. This is best palpated through the rectum. The parametrial induration is directly continuous with the mass in the cervix. Mobility of the entire mass is still present. In the final stage the parametrial mass has invaded the pelvic parietal and visceral fasciae, or the bladder anteriorly, the rectum posteriorly, or the vaginal wall by downward extension and the regional lymphnodes either by direct ex-

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tension through the lymphatics or by the formation of emboli. This is termed the "frozen pelvis." Invasion of bladder, rectum or vagina or parietal fascia stamps the disease as an incurable one. The outspoken characteristic of this terminal stage is fixation of the tumor. Fixation of any cancer in any region of the body means an infaust prognosis.

Hence the carcinomas may be grouped according to the extent of the growth and the degree of invasion:

1. Clearly movable and localized growth.
2. Doubtfully localized growth.
3. Parametrial or regional lymphgland invasion but mass as a whole movable.
4. The fixed growth, or the growth which has invaded either bladder, rectum or vagina or caused distant metastases.

A beginning carcinoma does not cause any symptoms. When necrosis in the center of the nodule leads to ulceration then contact bleeding occurs; when necrosis advances and the growth becomes a brainlike consistency then discharge and hemorrhage from erosion of blood vessels ensue. Fixation of the tumor or invasion of neighboring organs elicit pain in addition to discharge and hemorrhage. Invasion of neighboring organs causes symptoms produced in the organ by such invasion as dysuria, pollakiuria, hematuria, pyuria, painful defecation, rectal tenesmus, mucous or bloody discharges from rectum. Infection of a cancer bed causes the cadaverlike odor so characteristic of untreated or neglected cancers. Septicity, also, renders the course of the disease much more rapid and much more malignant.

If these findings are tabulated in the sequence of their development then the following interrelations may be established:

Disease:	CHRONIC CERVICITIS	CARCINOMA			
		1st Stage	2nd Stage	3rd Stage	4th Stage
Microscopic:	Proliferation of surface epithelium.	Atypia of epithelial cells.	Plus breaking thru basement membrane.	Plus necrosis and destruction of adjacent tissues.	Plus regional or local metastases.
Macroscopic:	Erosions. Nabothian cysts.	Nodule.	Ulcer or papilloma.	Infiltrating ulcer or cauliflower growth.	Crater.
Clinical extent:		Clearly limited.	Doubtfully limited.	Invasion of parametria or inguinal lymph-nodes with mobility.	Fixed or invading bladder, rectum, vagina or distant organs.
Symptoms:		None.	Contact bleeding.	Hemorrhage and discharge.	Hemorrhage, discharge, pain.
Treatment:		Surgery or radiation.	Radiation.	Radiation.	Palliation.
Good end-results:		70% to 90%	30% to 40%	10% to 20%	None.

DISCUSSION

It is seen that the silent, clearly localized carcinomas give the highest number of good five year end results. The question arises how such early stages may be found. It is imperative that every infection of the cervix receive a most careful follow-up. When the acute infection has subsided re-examinations should be made every two months and if residues are found either erosions or cysts they should be cauterized with the nasal cautery snare. If they do not heal then low amputation must be done. The removed tissue should be subjected to microscopic examination. Following abortion or full term labor re-examinations also should be made for evidences of either lacerations or erosions. If present they should be cauterized. If resistant to cauterization low amputation should follow. All tissues should be subjected to microscopic examination.

Every patient coming to the office should be subjected to a painstaking pelvic examination by palpation and inspection. If nodules or ulcers are found then they should be cauterized. If they do not yield to the treatment with the cautery then biopsy should be done. However, the diseased area should not be incised but excised within the healthy tissues. Periodic health surveys should be practiced in all patients and repeated at least every twelve months.

The Schiller iodine test should be applied to every cervix. A uniformly brown discoloration means absence of carcinoma. A white spot may be an erosion, a luetic ulcer, a leukoplakia or a carcinoma. Careful microscopic examination of tissues immediately removed will make an immediate and correct diagnosis possible.

The results of treatment according to this plan are shown in the followinig table.

Clinical Group	1.	2.	3.	4.	Total
Number	35	62	220	169	486
Total Number Five Year Good End Results	28	26	36	3	93
Percentage Five Year Good End Results	80.0	41.94	16.36	1.72	19.14

CONCLUSIONS

1. Prophylaxis of carcinoma of the uterine cervix means search for evidences of chronic cervicitis, the residue of either acute infections, or the sequalae of parturition.

2. Periodic health surveys should and must include inspection and palpation of the pelvic organs to discover evidences of chronic cervicitis or the nodules of the silent stage of cancer.

3. Treatment of chronic cervicitis and the early stage of carcinoma of the cervix will put us in the control of the disease.

THE INTRAVENOUS USE OF ACRIFLAVIN IN THE TREATMENT OF PYELITIS AND CYSTITIS, WITH A CASE REPORT*

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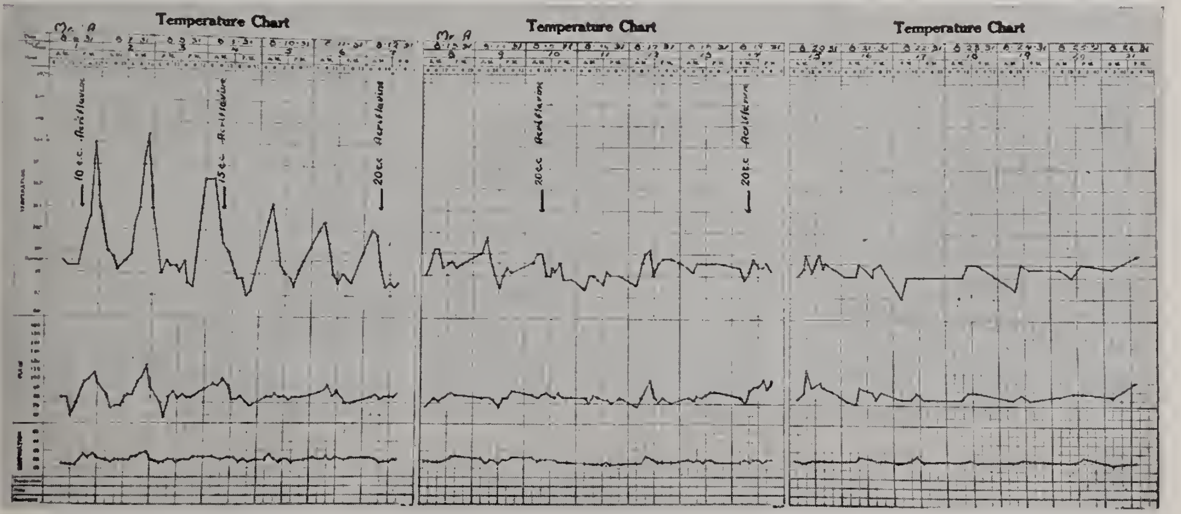
The acridin dyes have been extensively used for years as antiseptics and germicides. Their use as urinary antiseptics, also their efficacy for urethral instillations, urethral and bladder irrigations, has been well established.

Acriflavin (trypaflavin) is one of the best known dyes in this group. It has been used orally in various doses as a urinary antiseptic for a long time. On account of its nauseating effect it is usually difficult to give enough of the dye to produce any therapeutic result. It has been given intravenously for various bacteremias and many good results have been reported. We personally have used it in various types of sepsis and also in undulant fever, with good results, but have been especially interested in its beneficial results in cases of pyelitis and purulent cystitis. The intravenous use of acriflavin is especially of value because it can be given without producing the nausea usually encountered by its oral use.



We have used neutral acriflavin intravenously in a number of cases of pyelitis and have been so gratified with our results that we wish to report the method used. We use a one per cent solution. It is absolutely essential that the solution be freshly prepared and used within forty-eight hours, preferably twenty-four hours, because toxic effects may be noted by using older solutions.

The solution is prepared by dissolving neutral acriflavin in normal salt solution made of freshly distilled water and chemically pure salt. It is then filtered and put into glass ampules and sterilized in an autoclave. The average adult dose is from ten to twenty-five cubic centimeters. As a rule, we start with ten cubic centimeters. increasing the dose five centimeters each time until the maximum dosage is reached.

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*From Department of Medicine, Creighton University.

The patient should be tested for hypersensitiveness by giving only one cubic centimeter the first day, and then follow with the larger dose the day after. Cases of hypersensitiveness may occur, but we have never encountered the same in any patient under our observation. Tincture of iodine should not be used on the skin in preparation of the patient, because a chemical change takes place and an irritation of the vein may occur.

We give the injections every third or fourth day and continue until the desired result is obtained. Usually four to eight injections are sufficient. The injection should be given slowly, not exceeding one cubic centimeter per minute. The dye appears in the urine in seven to twelve minutes in normally functioning kidneys and continues to be excreted for several hours after the injection.

We wish to report the following typical case of pyelitis in which acriflavin was used intravenously:

Mr. P. S., age 27, farmer. Entered hospital August 6th, 1931.

Complaints: Chills and fever. Two weeks' duration.

Family history, negative.

Past history, negative.

Present illness: Two weeks ago the patient was taken suddenly ill with chills, fever and sweats. He was treated at home by his family doctor with the usual remedies, but failed to respond and on account of his progressive weakness was referred to us for diagnosis and treatment.

Systems: G. I., negative. Respiratory, negative. Cardio Vascular, negative. Genito-Urinary: The patient has a marked diurnal frequency, but no marked nocturnal frequency. He had some burning, and very little spasm. The urine passed was turbid, but not red. No history of colic, crises, incontinence, etc. Nervous S., negative.

Examination: The physical examination was negative except for a marked tenderness over the right kidney both on palpation and fist percussion.

Blood Pressure: Systolic, 116; diastolic, 72.

Diagnosis: Pyelitis, right kidney. Later, when the patient's condition improved, cystoscopic examination with a pyelogram was made. The right renal pelvis was markedly dilated and the function poor. The left kidney function was good. Surgery was advised, but refused.

Blood count, August 6th, 1931:

Red Blood Cells	5,300,000
White Blood Cells	7,200
Hemoglobin	74%
Poly's.	64%
Lymphocytes	36%

No pathological cells or structure.

Urinalysis:

ON ADMISSION	ON DISMISSAL
August 6, 1931	August 28, 1931
Color, dark straw	Amber
Reaction, Alkaline	Alkaline
Spec. Gravity, 1.014	1.010
Albumen +++	Trace
Sugar, negative	Negative
Microscopic, many pus cells.	Very few pus cells.
Moderate number red blood cells.	No red blood cells.

Urine culture, August 6, 1931: Streptococcus pyogenes. B. Coli fairly heavy. 48 hours' growth.

Blood culture, August 9, 1931: Negative.

Aglutination tests, August 9, 1931: Negative.

Acriflavin was given as indicated on the following chart:

The patient's improvent was rapid, and he felt so well he refused operation. He had one subsequent attack several months later, but responded again to similar treatment.

NEW TECHNIQUE DESIGNED FOR ELECTROCOAGULATION OF VASCULAR TUMORS*

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Vascular tumors which cannot be removed with the sharp scalpel can be readily removed by electrocoagulation. By employing a specially designed technique the operation can be bloodlessly and rapidly done.

This technique consists in using two pointed active electrodes instead of the one active and one inactive electrode as is generally done. The two electrodes are placed in contact with the tissue about 1.5 cm. apart and the high frequency current is thus short circuited between them. In this manner very intense heat is generated between the two electrodes which is sufficient to congeal blood in large vessels and vascular spaces before the walls are opened. In this way the tissue is not separated until after it has been coagulated. As a result no bleeding occurs.

There are many tumors so fragile that hemostatic forceps cannot be applied. In this type coagulation by the method described is the only way to accomplish removal. In cases where the shape of the tumor lends itself to amputation, a line may be coagulated across the base. This is accomplished by holding the two electrodes in contact with the tissues at one place long enough to coagulate the tissue between them, then moving to the area next. This process is repeated until a line is coagulated across the base of the tumor, then gentle traction is applied with one hand on the base and one on the tumor. In this manner the coagulated portion separates. Coagulation is then carried on across through this groove. This method is continued until the entire thickness of the tumor is separated from its base.

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*Read before the Omaha-Douglas County Medical Society, November 9th, 1932.

By this technique the blood vessels and vascular spaces are coagulated before they are opened, thus making a bloodless operation of it. This technique is well illustrated by the following case:

Miss A. M., an unmarried white woman, aged 33, complained of a large tumor on the right side of the face. This tumor was a massive neurofibroma arising from the right side of the face. Five previous attempts at surgical removal had been unsuccessful because of hemorrhage. Figures 1 and 2 give an idea of the size and appearance of the tumor.

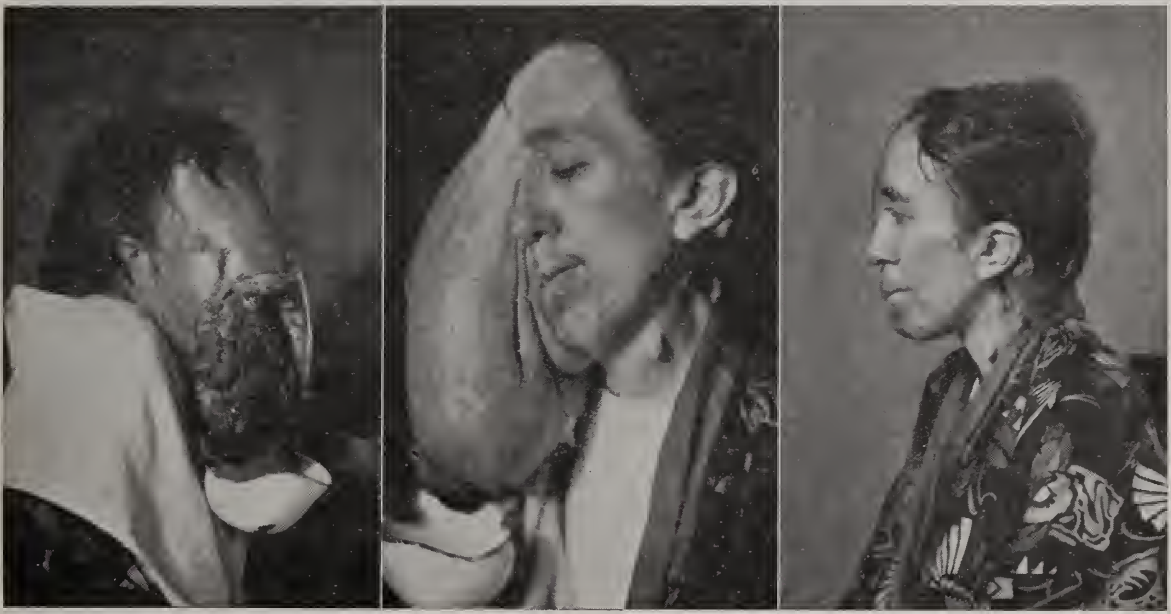

Fig. 1 Mrs. N. S. P. Photograph showing large cauliflower epithelioma on right cheek.
Fig. 2 Photograph showing extent of elevation above skin surface.
Fig. 3 Showing result after destruction by bipolar electrocoagulation saving the mucous membrane of the cheek. Healing by epidermization with minimum scar.

Operation and Result: Following a preliminary hypodermic with one-sixth grain (0.011 gm.) of morphine sulphate, "Avertin" was administered by rectum, 80 mg. per kilogram of body weight being used. This anesthetic was chosen because of the absence of fire hazard when electrocoagulation is used about the face. Aware of the size of the venous spaces which had made previous attempts at surgical removal fail, we used electrocoagulation, the current chosen being one of relatively low frequency, low voltage and high amperage. IN ORDER TO INCREASE THE HEAT FURTHER, TWO POINTED ACTIVE ELECTRODES WERE USED. THESE WERE PLACED IN CONTACT WITH THE TISSUE ABOUT 1.5 CM. APART AND HELD IN ONE POSITION LONG ENOUGH TO COAGULATE THE TISSUE BUT NOT TO CHAR IT. AN ADJACENT AREA WAS THEN COAGULATED. THIS PROCESS WAS CONTINUED UNTIL THE ENTIRE THICKNESS OF THE SKIN AND UNDERLYING TUMOR MASS WERE COAGULATED ACROSS, THE COAGULATED BAND BEING ABOUT 2.5 CM. WIDE. WITH ONE HAND ON EACH SIDE OF THIS COAGULATED BAND, GENTLE PRESSURE WAS MADE SO AS TO PULL THE TUMOR APART. The coagulated tissue easily separated. In this manner we were able to coagulate the vascular spaces and vessels before severing them, making a bloodless operation of it.

The coagulated tissue, attached to the proximal side of the wound, separated in about one week, after which healthy granulations appeared. After the granulations were in a proper condition a plastic operation was done to close the defect as well as possible, although complete closure could not be made. The remaining defect was allowed to fill in by granulation and epidermization.

The integument over the tumor was thickened to 4.5 cm. The superficial veins were about 1 cm. in diameter and the subcutaneous tissue contained large venous spaces so that hemostasis was impossible with hemostatic forceps. The technique described enabled us to coagulate this tissue, producing thrombi in the venous spaces before they were opened. The coagulated tissue was then pulled apart without cutting and without bleeding.

A further advantage of this technique is the nice control of the depth of coagulation. Many times diseased tissue lies in intimate contact with great vessels or large nerve trunks where careful dissection is indicated. By reducing the current to the smallest amount needed to coagulate the small amount of tissue between the two pointed electrodes, tumor tissue may be coagulated off these important structures safely and thoroughly.

In work about the face, one frequently needs to preserve the mucosa of the mouth intact. Here accurate control of the depth of coagulation is very important. This bipolar technique meets the need. This is well illustrated by the following case:

Mrs. N. S. P. The patient is a married white woman of 54 years. She says that one year ago she noted an ulcer on the right cheek in the central portion of a chronic eczematous area. It soon began to grow rapidly until now it is large and cauliflower like in appearance.

Examination shows the growth elevated above the surface 1.5 cm. and measuring 7.5 cm. in diameter. The growth was diagnosed as epithelioma.

Treatment: Under infiltrative anesthesia with 1 per cent novocaine solution, the mass was coagulated using two active electrodes, short circuiting the current parallel with the external plane of the cheek. By this method the growth was destroyed but the mucous membrane of the cheek was left intact. Healing occurred rapidly, epidermization taking place without the use of skin grafts. This patient has remained well eight and one-half years.

By employing two rather stiff aluminum electrode points one can do dissection by this technique. The removal of carbuncles and large tumors on the back of the neck can be accomplished quickly and bloodlessly in this manner. One electrode is moved slowly along in contact with the tissue while the other follows it at about 1.5 cm. distance. This method coagulates the tissues so rapidly that the second electrode pushes through the coagulated portion easily, making the same effect as an incision 1.5 cm. deep around the base of the diseased area. The process is repeated going under the tumor, thus removing it en masse.

In cooperation with one of my colleagues, Dr. J. A. Weinberg, this technique has been applied to lobectomy of the lung. This technique makes the removal of the lobe bloodless and at the same time very expeditious. One must thoroughly coagulate the bronchus and vessels before pulling the lobe away from its attachment.

This type of coagulation can only be done with a current of one million to one million eight hundred thousand frequencies per second. The higher frequencies cut too much and coagulate too little. This technique can only be reproduced by the use of a coil machine of low frequency and high amperage so that sufficient heat can be generated in the tissues to coagulate them quickly to the consistency of a medium hardboiled white of egg. None of the radio tube types of machine yet produced have sufficient coagulating quality.

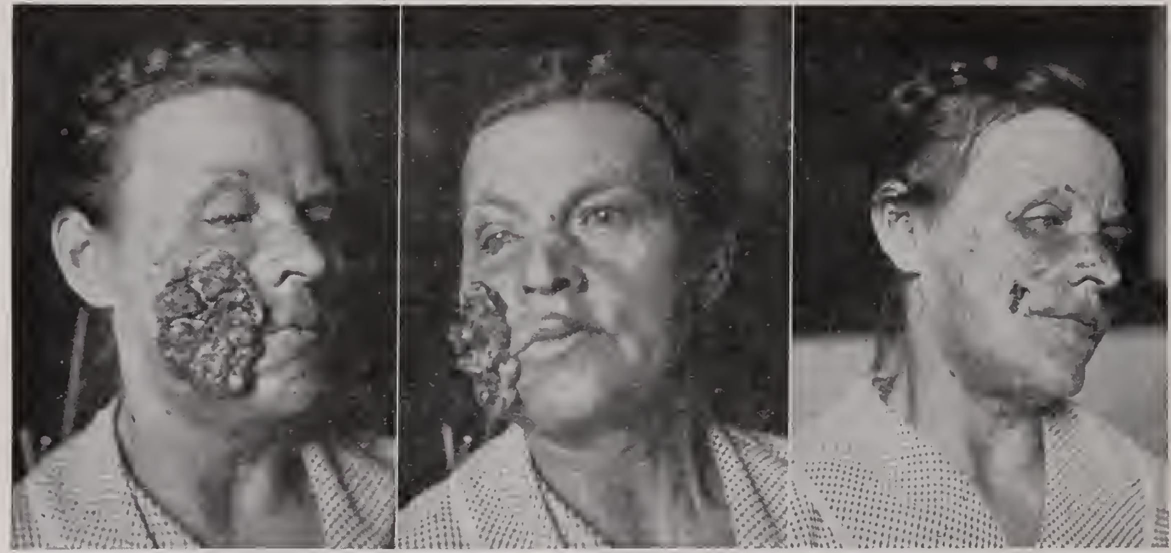

Fig. 4 Miss A. M. Photograph from right showing very large tumor which has broken down. The vascular spaces in the subcutaneous tissue made surgical removal impossible. Bipolar electrocoagulation removed this without any bleeding.

Fig. 5 Photograph of same patient from left side. The cleft in the medial aspect of the tumor is the elongated palpebral fissure.

Fig. 6 Photograph from left after tumor has been removed by electrocoagulation with two active electrodes.

By the usual method of coagulation one active electrode and one inactive electrode are used. The inactive electrode is placed sometimes on the back between the shoulders, at other times strapped on the calf of the leg or thigh. These methods place a great deal of tissue resistance in the electrical circuit greatly cutting down the amount of heat available at the active electrode. By making variable amounts of tissue resistance in the circuit the same settings on the machine will produce variable results depending on the location of the indifferent electrode with relationship to the active one.

The technique employing the two active electrodes escapes from all these variable factors and makes possible work which cannot be done by any other method. The advantages of electrocoagulation by this technique are as follows:

Accuracy of Control: The current used for this work can be adjusted to any desired effect so that work may be done with perfect safety on the margin of the eyelid, about the inner canthus of the eye, in the nares, the nasopharnyx, mouth or other body cavities or tumors on the body surface.

No Bleeding: The current seals the vessels as the work is being done so that no loss of blood occurs. This is especially valuable in very vascular growths or in the enfeebled patient where loss of blood would be a serious drain on the vitality.

Painless: The great majority of the work can be done under novocain anesthesia with occasional use of cocaine application to mucous surfaces. When general anesthesia is necessary, Avertin is preferable.

Absence of Afterpain: Patients remark about the absence of pain following the treatment. Even in amputation of the tongue the patient is quite free from pain other than the soreness on movement or touching.

Scar: The scar is small compared to the work done and is pliable. Where large areas have been removed, plastice surgery is a great help in restoring the parts.

ERRORS OF OMISSION IN THE TREATMENT OF HEAD INJURIES

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No one is expected to be free from errors of omission or of judgment in the practice of medicine. Reasonable qualification in the work undertaken and attention to the patient are all that are required by law. The recognition of mistakes in diagnosis and treatment, however, is necessary for progress in medicine and contributes greatly to the clinical judgment of the practitioner of experience. The following remarks on the treatment of head injuries are intended to be instructional rather than critical, by emphasizing principles and facts which may save the patient, the attending physician or the consultant from avoidable errors.

Head injuries always are potentially serious accidents. even though slight, for many a patient who did not appear seriously injured at the time of the accident has gone on to death within 48 hours or has been left with distressing symptoms for months or years. The first rule in all head injuries is to keep the patient under close observation during those first 48 hours to recognize early signs which may permit successful treatment, and not to wait until terminal symptoms appear when anyone can recognize the patient is dying, when treatment rarely succeeds.

Accidents frequently occur at night and due to shortage of help, and sometimes sleepiness, the patient is left under the care of a busy nurse who is not qualified and is not instructed to recognize early danger signals. The physician goes home to get some much needed rest and the interne, if available, likewise goes to bed. The nurse should be instructed to take hourly record of pulse, respiration and reaction of the patient, and to recognize that a pulse of 60 per minute, respiration of 15, and increased restlessness are very suspicious signs of increasing intracranial pressure and should be reported to the physician, regardless of his fatigue or temperament. A first class nurse will report, in addition, the blood pressure of the patient and will know that a rising systolic or dropping diastolic, with the difference, or pulse pressure, equaling the diastolic figure, signifies serious intracranial pressure. Inequality of the pupils, loss of corneal reflex and inequality in movement of the face or extremities should be noted by the nurse at an early stage before hemiplegia and coma have developed from a focal hemorrhage and pressure.

The interne needs as much or more instruction than the nurse, particularly if he assumes responsibility before the attending physician arrives. Considerable loss of blood from the scalp can be prevented by a few clamps on the aponeurosis reflected back over the scalp edge, or by direct pressure over the entering artery. He should be warned about giving morphine for it is a dangerous drug in head injuries. It depresses the respiratory center and masks pupillary reaction. In most neurosurgical clinics, where intracranial pressure is commonly encountered, it has been found necessary to prohibit its use on account of the fatalities from respiratory failure which have followed. Codiene is preferable if an opiate must be given. but barbital derivatives, paralhelyde or chloral hydrate are safer. It is disconcerting to find a patient so depressed by hypnotics that it is difficult to interpret signs and symptoms, or to have him stop breathing shortly after morphine is given.

A patient in shock, with blood pressure under 90 syctolic, of course, must be treated for shock first. by quiet, heat, caffiene, intravenous glucose or transfusion. To add operative interference to such a patient, or to one with signs of collapse of the medullary centers, simply courts disaster and discredits surgery. The signs of medullary collapse are rising temperature, pulse and respirations with increasing coma. This change, following an intracranial pressure syndrome, indicates impending death and is not reversible by surgical interference, and rarely by medical means. The head injury case which has been allowed to reach this stage before surgical interference is considered has lost what opportunity he may have had for relief.

Focal paralytic signs should be noted at the earliest possible moment, when the patient is first seen, for if they are present from the time of the injury they indicate cortical lacration, and if they appear later in increasing degree they indicate hemorrhage. Not to know how long the paralysis has been present is an error of omission which makes surgical interpretation difficult. Middle meningeal hemorrhage is comparatively infrequent in occurrence, not over ten per cent, and there may be a tendency to be off guard when it develops. The injury in the temple with fracture line crossing the middle meningeal groove should put one on guard and lead to early detection of the dilated pupil on that side and the slight facial weakness and loss of corneal reflex on the opposite side. Death from middle meningeal hemorrhage is unnecessary if early diagnosis is made.

Bleeding in head injuries frequently occurs into the cerebro-spinal fluid and often is missed in the diagnosis and treatment. This bleeding may be massive from rupture of large sinuses at the base, with rapidly increasing signs of intracranial pressure and death within an hour or two; or it may be moderate from rupture of small veins or cortical vessels in which case there usually is a tell-tale slight neck rigidity. The occipital head injury is particularly liable to be complicated by basilar meningeal hemorrhage and the prolonged restlessness, headache and irritability of these patients reflects the low grade pressure and irritation caused by this blood in the cerebrospinal fluid. These patients may recover without spinal drainage and there may be occasional danger in spinal puncture; but I thoroughly believe the greatest good can be done by removing this blood and relieving pressure by repeated spinal taps, daily or oftener, until the fluid comes clear and under normal pressure. The occipital injury cases are prone to post-traumatic headache and dizziness, a part of which undoubtedly is due to undrained basilar hemorrhage.

Brain edema, either local or generalized, occurs after nearly every head injury, just as any soft tissue will swell when bruised. The inside of the skull is almost a closed cavity where brain swelling quickly obliterates the cerebrospinal fluid spaces and prevents normal circulation. The maximum brain edema symptoms appear on the second or third day and may be difficult to distinguish from hemorrhage. There is headache, irritability, restlessness and slow pulse but no focal signs and rarely loss of consciousness or increased pulse pressure. Spinal puncture reveals a clear fluid under moderate pressure which quickly drops to normal by withdrawal of a few cubic centimeters of fluid, indicating a small fluid bed. These patients recover slowly if unrelieved by dehydration therapy as active magnesium sulphate catharsis or intravenous hypertonic glucose injections. Their prompt improvement under this therapy makes it an advisable procedure in all cases. Judgment and moderation should be exercized, however, for symptoms can be produced by two much dehydration as well as by brain edema.

Compound and depressed skull fractures require prompt surgical care after recovery from shock. Thorough debridement and saline irrigation of contaminated wounds usually will permit immediate closure and primary healing, whereas carelessness or too much delay will mean an infected wound which handicaps any later necessary surgery. An unrecognized depressed fracture in an infected scalp wound leads to osteomyelitis, brain abscess or meningitis and is avoidable.

A nasal cerebrospinal fluid fistula from fracture across the cribiform plate can easily be overlooked if the patient is a child or lies on his back constantly. Frequent swallowing of the nasal fluid may give the clue, although every patient should be turned with his face down long enough to detect a blood stained fluid discharge from either nostril. If this persists over 48 hours, infection is almost certain to penetrate to the meninges and the patient dies of meningitis at the end of two to four weeks. It is better to close this tear in the dura through a frontal opening than to wait for hopeless infection to occur.

At the end of two or three weeks after a head injury of moderate severity and satisfactory recovery, the patient often develops some headache and pain in his eyes. He may have gone home and not be under observation. A recheck of his spinal fluid usually shows a pressure of 16 to 20 millimeters of mercury, and his symptoms are promptly relieved by one or two spinal drainages. If this low grade pressure persists, it probably is better to do a subtemporal decompression than permit a chronic syndrome to develop. Subtemporal decompression is a comparatively simple brain operation which should be done under local anesthesia. Formerly it was resorted to frequently, often unnecessarily, due to difficulty of interpreting neurologic symptoms and to the impression that something surgical must be done when the patient does not recover consciousness promptly. With dehydration treatment of brain edema and more frequent spinal drainage, rarely is a decompression necessary in the acute stage of a head injury. It undoubtedly is indicated in some cases, however, and our present tendency to depend entirely on medical treatment may be overdone a little. This reaction against operation in head injuries even extends so far occasionally that patients are allowed to lie in the hospital without even medical treatment other than sedatives. Intelligent interpretation of neurologic symptoms and active treatment are necessary if the best results are to be obtained.

The common late symptoms from head injury, headache and dizziness, are most disturbing and difficult to interpret. Mental shock, prolonged inactivity and prospects of compensation may all enter into the picture. That many of these complaints have an organic basis has now been established by the encephelogram, which may show arachnoid obliteration, cortical atrophy and dilatation or deformity of the ventricles. No such case should be dismissed as functional or hopeless without this diagnostic and sometimes therapeutic procedure. In over 50% of the chronic cases the alterative effect of spinal air injection relieves them of their symptoms.

I sometimes think that we tend to be too cautious in maintaining prolonged inactivity after head injury. The man who gets back to his work at the earliest possible time is less inclined to develop functional disability. Children cannot be kept inactive for very long after their symptoms disappear and they do not seem to suffer from it. If a man appears well and wants to return to work within two weeks to a month after a head injury of moderate severity, perhaps he should be encouraged to do so, instead of frightening him by exceeding caution and inactivity of two to six months as is the present tendency.

THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF TUMORS OF THE BREAST*

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IN TWO PARTS—PART II

In discussing the treatment it must be remembered that there is a definite danger of later malignancy In a single cyst a wide excision of that portion of the breast containing the cyst will be adequate. In multiple cysts it is better to remove the entire breast, but not the pectoralis muscles or lymphatics. If carcinoma is found, of course, the treatment is radical mastectomy.

Unfortunately, I have no example of papilloma of the breast without other changes. This, as I have stated before, commonly arises in the preceding condition as an intermidate stage between it and carcinoma. The preceding case shows beginning papilloma formation, and the following case illustrates a duct carcinoma which probably arose from a papilloma as both conditions were seen in studying the sections. The chief clinical sign is a hemorrhagic discharge from the nipple, which may also be present in carcinoma. The papillomata are very often multiple and in that condition frequently confined to a single duct. There is a tumor composed of a central stalk of connective tissue covered by epithelial cells. If the papilloma is single the usual locations are: In the duct, in the nipple, the ampulla or in one of the main large branches of the duct. Multiple papillomata are commonly unilateral. occasionally bilateral, but are usually confined to a single duct and its branches. The average age is thirty-five to forty-five. Hemorrhage from the nipple is more common in this condition than in duct carcinoma. In multiple papillomata pain or discomfort usually occur and if there is distention, caused by severe hemorrhage, there may be very severe pain with tenderness and some increase in size of the breast. On physical examination that portion of the breast may appear nodular, or in some cases the only sign is bleeding, as palpation is absolutely normal. Transillumination may show an opacity along the duct due to the blood contained in it. There is no change in the nipple or skin of the breast and no axillary lymphadenopathy. In case of papilloma, removal of the entire breast is the safest procedure. A local removal is so often inadequate because of the frequency of multiple papillomata. If not all removed, those remaining may become malignant. Twenty per cent of the cases of carcinoma of the breast, according to Cheatle, arise in previous benign lesions, the commonest of which is papilloma.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

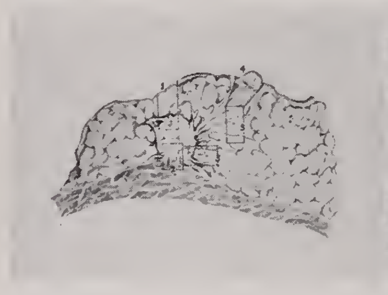

Fig. 4 Mrs. E. R. Age 71. Gross section through carcinoma simplex. Dotted lines show areas from which microscopic sections were made.

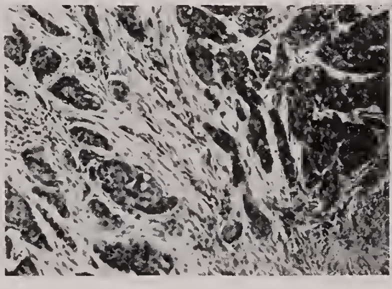

Fig. 5 Mrs. E. R. Age 71. Microscopic section from case shown in preceding figure. Diagnosis: Carcinoma simplex. X 120.

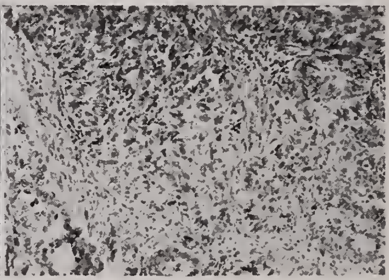

Fig. 6 Mrs. F. C. Age 38. Carcinoma in a lactating breast. X 120.

The following three cases illustrate different forms of carcinoma. The first is Mrs. R. B., Immanuel hospital, 40695, age 64, who noticed a dimpling of the skin over the right breast about three months before admission, but no lump there until one week ago. She had no pain or discomfort and there was no trouble in her breast while nursing her two children. Examination showed a dimpling of the skin 2 cm. above and external to the right niple, beneath which was a small, hard mass attached to the skin through the suspensory ligaments described by Sir Astley Cooper. On moving the tumor the pull on these ligaments increased the dimpling of the skin. The mass was not definitely circumscribed nor encapsulated and was freely movable over the chest wall. No axillary enlargement was palpable. On September 3, 1931, B. B. Davis performed a radical mastectomy. Microscopically most of the ducts in the region of the tumor were found to be packed full of epithelial cells. In one or two places papillomata were seen to push into the lumen of the duct and be entirely surrounded by these epithelial cells, indicating a possible transformation from a pre-existing papilloma. This microscopic picture is one of a pre-cancerous lesion, but should not be called carcinoma unless the basement membrane of the duct is broken through at some place and the cells are out in the connective tissue stroma. After very careful study of the section we found that this had occurred in several areas, therefore the diagnosis was duct carcinoma. The prognosis in regard to the cure is very good.

Mrs. E. R., Immanuel hospital, 42242, age 71, accidentally noticed a lump in her left breast about eight months before I saw her, which caused some aching but no especial pain. She immediately consulted a physician who told her she had neuritis. The lump has always been quite firm and has not greatly increased in size since she first observed it. A few days ago she saw another physician who diagnosed it carcinoma and advised operation. My examination disclosed a firm mass four centimeters in diameter and approximately three centimeters thick which was located in the upper, inner quadrant of the left breast. The lump was fixed in the breast, but fairly movable posteriorly on the chest wall. The nipple was retracted so as to be only about half as prominent as on the other breast and the breast was drawn upward so that the nipple was about a half inch superior to that of the opposite breast. There was slight dimpling of the skin over the mass and on moving the tumor the dimpling was increased. The axillary glands were not enlarged. Transillumination showed an opaque tumor with no definite border. The opposite breast was normal and a roentgenogram of the lung showed no metastasis. Although she had very definite retraction of the nipple she had not previously noticed it. Using the radio knife I performed a left radical mastectomy with removal of the pectoralis major and minor muscles and axillary lymph glands on February 19, 1932. A study of the breast after removal showed a hard, carcinomatous mass two centimeters in diameter at the location previously described. The accompanying drawing shows that definite roots can be seen extending out from the mass to the nipple causing it to retract and tumor cells invade the ligaments of Cooper causing them to draw down on the skin with the resultant dimpling. The posterior part of the tumor shows white streaks extending down through the deep fascia into the external part of the pectoralis major muscle. No axillary glands were involved. My feeling is that the prognosis as to curability is about sixty per cent. Microscopic examination showed cords of malignant cells with no definite plan lying in a rather firm connective tissue stroma. This type is sometimes referred to as carcinoma simplex.

The third carcinoma case is one developing late in pregnancy. Mrs. F. C., Immanuel hospital, 42637, age 38, has three children, ages 12 and 10 years, and 3 weeks, respectively. She nursed all the children and until this last time had no difficulty. Nine weeks ago, which was six weeks before the last child was born, she noticed a lump in the lower, outer quadrant of the left breast. This lump had never caused any symptoms and had not increased in size in the nine weeks since she discovered it. She stated that there was no difference in the milk from the two breasts. Examination showed her breasts about normal size for lactation, each producing a good quantity of milk. In the lower, outer quadrant of the left breast, however, there was a firm, somewhat irregular, but freely movable mass. There was no retraction of the nipple, dimpling of the skin or enlargement of axillary glands. The entire breast was opaque to transillumination, due to the lactation. On April 6, 1932, B. B. Davis excised the lump and as the immediate frozen section showed carcinoma, the breast was redraped and a radical left mastectomy was performed. Microscopic examination showed large cords of epithelial cells with no definite limiting membrane and appeared to be a very malignant medullary type of carcinoma. In some areas were round cell infiltration about which were seen typical lactating acini of the breast.

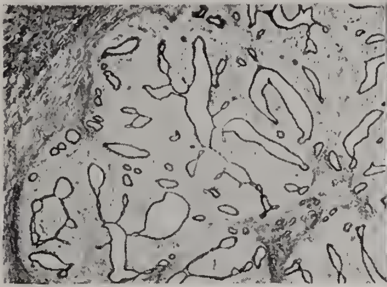

Fig. 7 Miss L. S. Age 22. Fibroadenoma. A portion of capsule is seen at one end. X 30.

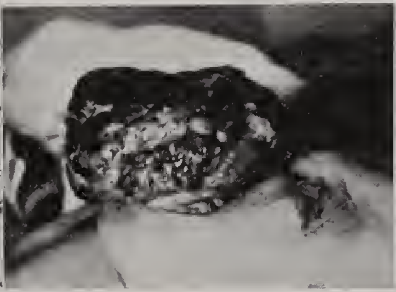

Fig. 8 Miss H. J. Age 66. Photograph of breast before operation. Diagnosis: Myxoma and sarcoma of breast.

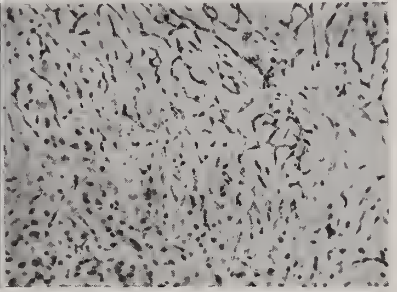

Fig. 9 Microphotograph of preceding case. Diagnosis: Myxoma and sarcoma. X 120.

The prognosis in a carcinoma of a lactating breast is very poor as the increased activity and blood supply causes rapid dissemination. This case is fortunate in having no axillary involvement as yet, but I fear she is almost certain to die within the next year of recurrence. After the operation she had deep x-ray therapy. Some authorities go so far as to advise against operation in a carcinoma of a lactating breast, saying that it is hopeless.

The following two cases are examples of connective tissue neoplasia,

Miss L. S., Immanuel hospital, 42137, age 22, complained of a full feeling with some aching and tingling in both breasts for about one week before menstruation and stopping as soon as menstruation began. This trouble has occurred for about two years. Her menstruation was somewhat scanty and occurred about every six weeks. This part of the history suggests mazoplasia, but also at about this time she noticed a small lump in the upper part of the right breast. Soon after this a lump appeared in the lower part of the right breast and four months ago another lump one inch lateral to the left nipple. This makes three lumps in all, two in the right and one in the left breast. The lumps had not increased in size, and did not enlarge before menstruation. There was no fluctuation, and the tumors were opaque to transillumination. On February 6, 1932, I excised one of the lumps which showed several small encapsulated solid tumors. On section they were shown to be encapsulated and made up of intra-lobular connective tissue with an increased number of normal appearing ducts. Elastic tissue stain showed the tumors to be outside the elastica of the ducts. Occasionally fibroadenomata develop in cases of mazoplasia and this seems to be one of them, the diagnosis being mazoplasia and pericanalicular fibroadenoma. At the same time a pelvic operation was done and a hemorrhagic cyst of the left ovary was found.

Fibroadenomata are solid tumors which may be round or lobular, are freely movable, unattached to the skin and do not cause retraction of the nipple from which there is no discharge. The edges are defined and the tumor is hard in young patients. They appear to be encapsulated although technically there is no capsule. They may be single or multiple and occur in one or both breasts. As a rule, in young patients, there is little or no pain, but in some instances pain may be intense and also referred to the shoulder and arm. There may be a marked increase in pain immediately before and during the menstrual period. They commonly occur in girls at. or soon after puberty, but may occur in older women. The most common breast tumor between fifteen and twenty-five is fibroadenoma.

As carcinoma occasionally occurs under twenty-five, it should also be kept in mind and if the tumor is single it should be explored and microscopic examination carried out. Carcinoma begins as a single lump and, therefore, if there are several tumors they are almost certain to be fibroadenomata. There is very slight risk of these growths becoming carcinoma, but an occasional one becomes sarcoma as the following history will demonstrate. However, unless there is marked growth in these multiple tumors there is no need for operation.

The following case is extremely interesting:

Miss H. J., University hospital, 37152, age 66, complained of a large fungating mass of the left breast. Six years ago she noticed a lump about the size of a hazel nut, two inches lateral to the left nipple. It caused no discomfort and did not grow until about six months ago. Previous to this time it was probably a fibroadenoma or myxoma and at that time underwent sarcomatous change. In the last six months it has grown very rapidly and has ulcertated forming a large fungating mass about four inches across and projecting forward about 1 1/3 inches from the skin surface. During the last six months there have been sharp, shooting pains and a drawing sensation in the breast with considerable discharge from the necrotic surface. She has never been married. A brother died of carcinoma of the face. Examination revealed this large fungating mass which projected forward rather than extending deep into the tissue. It was not adherent to the deep fascia, but freely movable over it. At the time the cancer committee considered it to be a carcinoma, but I made a remark that I had never seen such a large carcinomatous mass which was not adherent to the chest wall, and which did not have axillary lymphatic involvement. The other breast was normal and there were no metastases in the lung. In December, 1931, I did a simple left mastectomy with an endotherm knife. I did not do a radical operation as this sloughing mass was so infected I was afraid of spreading infection into the axilla, and planned later to do the axillary dissection.

Pathological report by Dr. Tollman stated that the tumor mass was quite lobular, on section some of the areas being firm and white, while others were composed of many cystic structures. These cystic masses were composed of gelatanous material which did not escape on cutting the capsules of the cyst. These cysts varied from 1 mm. to 1cm. in diameter and separated very easily, although each appeared to be attached by a small portion of the surface. Some of the underlying tissues of the breast had been drawn up into the base of this mass. In one of the areas was a small mass of cartilagenous consistency and appeared on careful palpation of the underlying structures, to reveal two partially circumscribed calcified masses. These do not have the appearance of tumor metastases.

The microscopic study was very interesting. Two sections involved parts of the circumscribed cystic structure and showed the typical arrangement of intracanalicular growth. The stroma of this tissue is a myxomatous mass showing widely scattered nuclei and a thin intercellular stroma. This shows no evidence of malignancy. Four other sections were essentially similar in character. The tissue was composed of compact masses of large cells arranging themselves in bands. In some places the cells were roughly spherical or rather oval in shape while elsewhere they took on definite and fairly uniform spindle shape. Some parts were characterized by considerable amounts of intercellular stroma while in others the cells were more compactly arranged. In more compact areas myxomatous areas were numerous. Occasionally multi-nuclear cells were seen. A number of small blood vessels were found scattered through the tissue, in the more rapidly growing portion they were simply sinuses. In other parts the blood vessels had definite muscular walls. Evidence of necrosis is present in parts of the tissue. One section of the underlying breast tissue showed the usual fatty and fibrous tissue containing scattered ducts. These ducts frequently showed hyperplasia of the epithelium which is growing into the lumen in papillary projection in a number of places. Elsewhere the epithelium is piled up and thickened. The microscopic diagnosis is intracanalicular myxo-fibroma and spindle cell sarcoma.

On reviewing this case it is very typical of sarcoma and we should not have made the mistake in diagnosis. In the first place there was a benign tumor, a fibroadenoma or myxoma, which after six years suddenly began to grow. This is rather typical of sarcoma which frequently originates in one of these pre-existing benign tumors. In the second place the lack of fixation to the chest wall, with the mass fungating forward, rather than ulcerating inward, and the lack of axillary metastasis pointed toward sarcoma. I do not think I would make this mistake again, but owing to the rarity of sarcoma we did not consider it. As sarcoma metastisizes through the blood stream rather than the lymphatics we did not later do an axillary resection, but gave her deep x-ray therapy after the operation.

One of our most recent diagnostic aids, which I have referred to in many of the case reports, is transillumination of the breast advocated recently by Max Cutler. It is done in the same manner as for a hydrocele or transillumination of the nasal sinuses. Tumors and increased epithelial growths are opaque to the light, blood is even more opaque so that the veins stand out, and blood in a duct, as in papilloma can be well made out. A hematoma looks like a tumor except that the opacity if anything is more intense and is uneven with its edges ill defined. Cysts which contain clear fluid are translucent like a hydrocele. This examination can be done by placing a strong light under the breast in a dark room and the examiner looking down onto the breast in such a manner that the light shows through it.

SUMMARY

The breast is practically devoid of lesions before puberty. A solid freely movable tumor between the ages of puberty and twenty-five is most likely fibro-adenoma and especially so if multiple. If single, carcinoma must be suspected and the tumor excised at once. rather than waiting to see if it will grow. Diffuse painful breasts with the pain accentuated before menstruation and with no definite lumps, but only a diffused nodularity which is tender, is probably mazoplasia. It is a physiological process, is not surgical, has no serious sequellae, and is treated by ovarian residue. If multple nodules appear, especially after the age of twenty-five, it is most likely cystiphorous desquamative epithelial hyperplasia, which is of importance because it may become carcinoma. These cysts are differentiated from solid fibroadenomata by transillumination. If the cyst is single it should be excised and if multiple mastectomy done. Bleeding from the nipple indicates most commonly papilloma or carcinoma. If unassociated with a lump, it is probably the former. However, due to its malignant tendency it should be excised and if multple the entire breast should be removed. Retraction of the nipple is most commonly congenital, follows an acute inflammation of the breast or is due to carcinoma. If it has come on recently in a middle aged or elderly woman a radical mastectomy should be performed. Any single painless lump of the breast should be considered cancer until proved otherwise and immediate biopsy advised.

I have not discussed all the lesions of the breast because of lack of time and neither have I gone into the question of treatment by roentgen ray or radium. The thing that I wish to emphasize is prompt treatment to the types of lesions which may be of serious consequence and, by careful diagnosis, the avoidance of operation when not necessary.

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DISCUSSION

S. A. SWENSON, M. D. (Oakland): I have had a rather unusual experience in having had eleven cases of cancer of the breast in twenty-two years of practice and not a single case of cancer of the cervix. Dr. B. B. Davis has operated on most of these cases. I think five of those operated on are living. Two of those he operated on have died, and one is dying at the hospital now. It has been five years since she had her operation.

There is a question in my mind in regard to the infectiousness of cancer. I heard Dr. John E. Summers say that cancer is infectious. A few years ago, I was at the Sioux Valley medical meeting, and heard the late Dr. Ochsner speak of cancer infection spreading. He said he knew it was infectious. Two of my cases of cancer of the breast were in the same family. Dr. B. B. Davis operated on both. The father died from cancer of the liver, and the mother from cancer of the stomach. One daughter is dead and one dying from cancer of the breast.

I was very much interested in Dr. Davis' illustration of transillumination. I did not realize it could be used in diagnosing cancer of the breast.

Dr. Davis' classification of breast tumors is interesting. I had a case which would come under his classification of megoplasia. The woman had one breast amputated for cancer. She developed a persistent soreness in the other breast and I feared metastasis. She was cured by ovarian extract.

J. E. SUMMERS, M. D. (Omaha): I should like to call attention to something about which we physicians have had a wrong impression. I refer to the relative proportion of cancer of the breast among single and married women. It is the general opinion that cancer of the breast is more common among married than single women. The reason is there are more married women of the cancer age than there are single women of that age. Vital statistics in Pennsylvania have been carefully studied, and it has shown, and published in the New York Medical Journal, that about two and one-half times as many single as married women, in proportion to number, had died of cancer of the breast. I believe this is true although, of course, most of the women I have operated upon for cancer of the breast have been married. There have been, however, a number of single ones. This is a subject worth while considering. I wrote a little article, published in Surgery, Gynecology and Obstetrics, October, 1931, Vol. LIII, 566, calling attention to the fact of this observation explaining my analysis of the cause, but I have not heard more of it; the error is too deeply rooted its correction will take time.

Another thing is the so-called new surgery—the use of surgical diathermy—in cancer. I have tried five different portable machines. If a cancerous breast is heavy, many machines advertised are not powerful enough for a satisfying technique. Last week I did a radical operation upon a heavy cancerous breast and found the portable machine I was using, which is supposed to be up-to-date, did not work as well as I think a machine should, possibly it was my faulty technique, although I have had a rather extensive experience and I have removed many breasts by surgical diathermy. I think we must have an improvement in the portable machines when we do heavy work. In dividing the larger pectoral muscle this machine did not do as I hoped it would. If you are going to do heavy work be careful in the selection of the machine.

DR. HERBERT DAVIS (closing): I think one of the best advances we have had in the study of breasts has been transillumination. I use it on every case. I have a patient who felt a lump that had been bothering her. I could not find it until I transilluminated the breast and there was a cyst where she had felt the lump.

In answer to the question about the infectiousness of cancer, I do not think it is. In regard to heredity, there are definite cancer families in which many have cancer. The debate goes on as to how much of a factor heredity plays. We cannot say definitely how much; undoubtedly some.

NEEDED HIM

The man was in the hospital after his first serious attempt to knock a train off the tracks.

"I fear I can be of very little assistance to you," he was comfortably assured by the doctor, "I'm a veterinary surgeon."

"Ah," exclaimed the victim, "you're just the man for my case. I was a jackass for ever attempting to cross the track ahead of that train."—Santa Fe Magazine.

NO LUCK

Mental Specialist: "And that habit of talking to yourself—there's nothing to worry about in that."

Patient: "Perhaps not; but I'm such a damn bore."

"What did you put in this prescription?"

"That I can tell only to the doctor," said the druggist.

"The doctor wants to know. Seems I gave you a Chinese laundry ticket and you filled that."

TRAUMATIC SURGERY IN A RURAL HOSPITAL*

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PART II

Abdominal Injuries: A gunshot wound of the abdomen was reported above under another heading. A three-year-old boy was run over by a wagon containing about 20 bushels of corn. Laporotomy showed a contused and collapsed segment of intestine. Hot packs restored normal appearance and gas passed freely through the contused loop. Convalescence was normal for ten days when symptoms of acute obstruction developed. The abdomen was reopened and an adhesion was found shutting off the lumen of the illeum. This was freed and a catheter inserted in the proximal loop after the Witzel method. Recovery was uneventful and no fistula followed the removal of the catheter.

A man aged forty was brought to the hospital 16 hours after receiving an abdominal injury. After 14 hours of a comparative comfort he was seized by terrific pain two hours before reaching the hospital. Laparotomy showed a collapsed segment of illeum following contusion. Hot packs restored normal appearance and gas passed through the loop. Recovery was uneventful.

A boy aged 19 was brought to the hospital following an automobile wreck. He showed evidence of a contusion in the right upper abdomen under the costal margin. He wanted to go home but was persuaded to remain under observation. Fifteen hours later he developed pain in the lower right abdomen in the appendiceal region. He had 10,000 leucocytes, had not vomited, had had a normal bowel movement, and his urine gave no evidence of kidney or bladder injury. An exploratory laporatomy was advised but he felt better in an hour and did not wish operation. Next morning, thirty-two hours after injury, the pain returned and he was operated. A long right rectus incision showed much free bile in the peritoneal cavity. The appendix was examined and found slightly inflamed probably from chemical irritation. The gallbladder showed a very small perforation through which the bile was escaping. The abdomen was drained and an uneventful recovery followed. It seems almost impossible for an abdominal contusion to rupture a healthy gallbladder but it so happened. He had been thrown against an iron when the car upset.

A boy aged 20 was brought to the hospital in severe shock following an automobile accident five hours before. The abdomen showed contusion marks. A catheterized specimen gave no evidence of kidney or bladder injury. His condition precluded operation and shock was treated with saline hypodermocylsis and morphine. Next morning he was better and the abdomen was opened. Much free blood was found which came from a tear in the omentum involving a large vessel. Active bleeding had ceased. Intestines showed evidence of severe contusion but no perforations. Liver and spleen were normal. He did well for fifty-four hours after operation when he suddenly collapsed and died in about an hour with symptoms of embolism. His injury was evidently caused by being thrown against the steering wheel. It is our system to always open the abdomen in doubtful cases as soon as the patient's condition permits. In following this plan for years and in many cases besides the ones in this series I have never had cause to regret it.

Herniae: Three cases of inguinal hernia gave sufficient evidence to satisfy the companies carrying the compensation insurance that they were of traumatic origin. All were operated by the Andrews method with cord transplantation and all have remained well.

DEATHS

To the surgeon practicing in a rural community echoes drift back from time to time of discussions of his cases held in pool halls, sales barns, and on street corners. Soon or late depending on the curve described by his mortality rate he arrives at the inevitable conclusion that deaths are the only results in his case series that his fellow citizens are interested in.

Injury	Cause	Time After Accident
1. Basal fracture	Shock	5 hrs.
2. Basal fracture	Shock	3 hrs.
3. Basal fracture, compound fracture tibia	Embolus	48 hrs.
4. Vertex fracture	Shock	6 hrs.
5. Vertex fracture. Fracture humerus	Shock	30 min.
6. Vertex fracture	Cerebral oedema	10 days
7. Fracture lower jaw. Laceration scalp	Acute alcoholism	7 days
8. Fracture hip. Severe contusions	Anuria due to shock	48 hrs.
9. Torn omental vessel. Contused intestine	Embolus	72 hrs.
10. Burn from scalp to waist	Shock	5 hrs.
11. Burn involving practically entire skin surface	Shock	3 hrs.

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*Presented before annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

The summary of these cases shows that the versatility of the work encountered in routine traumatic surgery. As Harry Mock points out a traumatic surgeon must be able to open a skull, do a laminectomy, take care of an injured abdomen, and must be familiar with all the principles of nerve and tendon repair. Also he must be very much at home in caring for all types of fractures. There is nothing regionally selective about trauma and the surgeon who undertakes to do this type of work must be able to work on any part of the anatomy.

ANALYSIS OF CAUSE OF INJURY

In considering the enormous increase in the incidence of trauma in rural communities one hundred cases were analyzed and the causes of the injuries tabulated. Results follow

Guns	7
Train	2
Machinery	13
Tractors	3
Wagons	4
Hogs	4
Cattle	2
Axe	1
Horses	6
Power Saws	3
Automobiles	55

This series is not conclusive except to show the preponderance of the automobile as a casuative factor. It is rather surprising, too, to find such domestic animals as hogs, cattle and horses responsible for 12% of the injuries and tractors for only 3%. The tractor is also led by the prosaic and innocent appearing wagon.

COMPARISONS AND CONCLUSIONS

It is evident that the incidence of trauma of severe type has enormously increased in rural communities since the days when interest in Ole Larson's minor injury quite eclipsed all other attractions at the Settende Mai celebration in Sever Jacobson's grove. In one accident at the Brodstone hospital we cared for two patients with fatal skull fractures and a third patient who had a brain concussion, fracture of upper and lower jaw, and a partial detachment of the left retina, a dislocation of the elbow and a fracture of the ulna. In one other accident, one patient received a basal fracture and a fracture of the lower jaw, another, a compound fracture of the right leg, and a third, a spinal injury resulting in paralysis from the 4th lumbar downward. In another accident a woman received a fracture of the humerus, the left tibia and fibula, the right tibia both in lower and upper third; and the right pelvic ramus. Five fractures in all. No industrial community has accidents more severe in type than these.

Facilities for caring for traumatic cases alone make a community hospital a needed asset in every sizable rural community. Surgeons in rural communities who have not had an opportunity to perfect themselves in traumatic surgery owe it to their clientele to do so. The best way to do this is to spend some time each year in traumatic clinics such as Sherman's at Pittsburgh, or Moorhead's in New York. Sherman is chief surgeon for Carnegie Steel and one of the outstanding traumatic surgeons of America. Moorhead is chief surgeon for the New York Street Railway lines and has written two very excellent works on Traumatotherapy. He is now conducting small selected classes in traumatic work. Loyd Noland at Fairfield, Ala., is also head of a clinic where outstanding traumatic work is done. He is chief surgeon of the Tennessee Coal, Iron and Railway Co. A few days at one of these places each year will enable a surgeon to keep in touch with the most approved methods of handling traumatic cases and give him an opportunity to see a large amount of material in a comparatively short time.

Medical schools in our great agricultural states should stress the teaching of traumatic surgery to undergraduates and staff surgeons should stress instruction in this line to internes. It is important to turn out young men who have the proper viewpoint on this type of work and the welfare of future patients will be safeguarded by this teaching. The satisfaction of a patient for whom a young doctor has gotten nice approximation in a lacerated wound will rapidly diminish if he finds in a few weeks that the "beautiful scar" covers an unrepaired nerve or tendon. Prompt diagnosis and early repair are the requisites for success in this type of work.

During my industrial days I often admired the excellent first aid work done by the trained teams at the various mines. I have seen men brought to the hospital who were injured 1200 feet underground. They would come in with wounds iodinized and dressed with sterile gauze, well applied splints on all fractures and the man in a wire "basket splint" that enabled them to make the trip up the shaft in the cage with the minimum of discomfort. Severe bleeding was always checked with a well applied tourniquet and everything was done in a craftsmanlike manner. Much effort and money is spent on first aid work, the men practice regularly and are also spurred on by the knowledge that their turn may come next. The companies and the men are well rewarded for their first aid efforts in lives saved and disabilities lessened. Knowledge

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of first aid is almost entirely lacking in a rural community. One man had an arm completely severed by a power saw. He was brought to the hospital with no tourniquet applied and was almost exsanguinated when he reached there. He lived, but a handkerchief twisted above the wound would have made his aftercare much simpler and would have improved his percentage of life expectancy immeasurably. A woman was helping a neighbor with threshers some twenty miles from the hospital. She dropped a sharp knife which cut a small artery in the dorsum of the foot. A little pressure would have stopped the blood but she was brought the twenty miles with no attempt whatever to check the bleeding. She also recovered but her life was needlessly imperilled.

A SUGGESTION

By one of the transitions frequent in the history of America during the last seventy-five years the rural community is rapidly approaching the accident incidence of the industrial community. Money and effort are constantly expended with high intelligence in the industries to prevent accidents and to render efficient first aid when they do occur. In our own community we have a large cement plant and a power company employing large forces of men. Their accidents are a negligible factor in the series here given due to the reasons given above. There is nothing like this working for the rural community. I have had an opportunity to observe the methods used along these lines by some of the largest corporations in America. Among them are, U. S. Steel, Pickands Mather, Anaconda Copper Co., Miami Copper Co., and Tennessee Copper Co. The material they had to work on was not promising, when they started, being made up of a largely foreign population, many of whom could speak but little English, but they achieved notable results. I think a campaign of instruction in accident prevention and first aid technic could be put on in our state sponsored by the state medical society and aided by the large insurance companies. The people could be reached by many channels such as schools, churches, 4-H clubs, the American Legion, the Boy Scouts, and farm publications. The radio, too, would be of great aid in such a campaign. We have a shining example in a neighbor Stute of what damage a radio can do. Conversely, it should do good if properly utilized. I would think that a farmer and "The Woman" would prefer a few minutes of such a program on the radio on a winter's evening to the unspeakable blah blah that the average farmers station puts on. I really feel that worth-while results could be secured by such a movement.

SUMMARY

1. In a rural hospital exceptionally well fitted in personnel and equipment for the handling of traumatic cases a survey of these cases for a four year period shows that ample opporunity was offered for the utilization of these advantages.

2. Intelligent utilization of the suspension traction method will improve results and minimize operative procedure in treating fractures of the long bones.

3. Severe and even fatal burns are surprisingly frequent in rural communities.

4. Most pleasing results often follow prompt recognition and early repair in nerve and tendon injuries.

5. Early exploratory laporatomy is advisable in abdominal trauma of severe nature.

6. Successful practice of traumatic surgery requires training, experience. and versatility.

7. Automobiles predominate as a causative factor in rural accidents. Domestic animals and wagons accounted for an unexpectedly high percentage.

8. During the past twenty-five years rural communities have been approaching industrial in the rate of incidence and severity of trauma. This factor alone makes well equipped rural hospitals a necessity.

9. Efforts to cultivate accident prevention consciousness and first aid instruction are entirely lacking in rural communities. The sharp contrast in industrial localities is an important factor in the increasing approximation of incidence ratio.

10. A state wide campaign of instruction along lines indicated above would secure worth-while results in all probability.

11. The state as a whole would benefit not only along humanitarian lines but also economically through lessened periods of disability and lower insurance rates.

DISCUSSION

A. A. CONRAD, M. D., (Crete): I have nothing to add. I think he should be congratulated for the excellence of this paper. I am a country doctor, but we have no hospital nor opportunity for doing this class of work, because Lincoln is so convenient. To me traumatic surgery is more gratifying than when going into a perfectly good belly to remove an appendix.

At Crete, we have had in our Camp Fire work first-aid demonstrations for the care of injuries. It is stimulating to see the interest these children take in this kind of work. It is also interesting to know how well they can do it. I think everyone who has watched the Red Cross work and the Camp Fire girls realizes how much is accomplished by these groups. St. Louis sends out reference material, not only on Camp Fire work, but for the Boy Scouts. The idea seems to be to give sufficient training so that there will be someone with enough intelligence to stop a hemorrhage or splint a bone before they start dragging the person around.

We are situated on a highway. I hate to see Sunday come. About eleven or twelve o'clock at night we have our greatest number of accidents—mostly people from Lincoln going back from Crete. Not that they are drunk, but they have had such a good time they are reckless.

MALIGNANT TUMORS OF THE UTERUS IN THE YOUNG*

A. A. SMITH, A. B., M. D., F. A. C. S.,
Hastings, Nebr.

Cancer of all descriptions and locations in the human body is receiving greater attention than ever before. Unquestionably, this disease is on the increase in the more highly developed countries of the earth. Cancer research laboratories are doing much work. Lay organizations and the press dispense information. The conclusions need, occasionally, to be reviewed and recast. Formerly we believed cancer to be a disease of the years of decline. We commonly referred to the climacteric and post menapausal years as the "cancer age of women". While a greater number of cancers may be seen between the ages of 45 and 50. it is also true that the greater number of other constitutional changes are noted at about this time. That cancer of the uterus, can and does, frequently occur in young women, must be kept constantly in mind.

Malignant tumors of the uterus from a hystopathological study are divided into three main classes: Carcinoma, sarcoma, and choreo-epithelioma. From an anatomical consideration, they are classified as cervical and fundal tumors. The anatomical site appears to play a greater role in the patients welfare than the type of malignant cell.

Incidence: H. H. Welch states that in a study of 31,000 carcinamatous patients, that about one-third of these had primary cancer of the uterus. Howard Kelly reports about 3.5 per cent of carcinoma of the cervix in an analysis of 11,000 gynecological patients histories. A recent review of the literature, and cancer research work seems to show an increasing percentage. Our own study points also to a large percentage increase.

Etiology: The etiology of cancer is still unknown. Foetal rests, irritation, chemical and physical, infection, chemicophysical change in the cells are all unproven theories. Despite the great amount of research, reported cancer deaths yearly increase. The increase is noted not only in the multipera of forty-five years or more, but in women who have borne one or no children or even those who have scarcely reached maturity.

In a review of the major gynecological work of my service for the past two and one-half years, I find the highest percentage of uterine cancer at the age of 44.

The following tabulation shows the incidence of cancer at the different ages in the entire series studied.

Ages 20 to 30 years, 4.5 per cent.
Ages 30 to 40 years, 0.15 per cent.
Ages 35 to 40 years, 7.3 per cent.
Ages 40 to 50 years, 16.0 per cent.
Ages 50 to 75 years, 14.0 per cent.

The average for all ages was 8.35 per cent. The yougest patient was 20 years old and the oldest 75 years.

The percentage of carcinoma is much higher than that given by Dr. Kelly of Baltimore but this may be accounted for in part by the fact that I have considered here only major operative or advanced conditions. The significant finding is the large number occurring beween twenty and thirty years.

Adeno-carcinoma of the fundus of the uterus is considered by gynecologists as being a disease of the later periods of life. While this may be true in the main. one must not lose sight of the fact that fundal cancer often occurs in the very young. Our greatest number were found before menopausal change. The youngest patient in the series was an unmarried girl, twenty years old. She gave a history of menstrual disturbance of over one year duration. During the last six months, there had been some watery discharge. There had been little or no "spotting" or color. The most troublesome symptoms were a sense of fullness in the pelvis with pressure against the bladder. General physical examination was negative except the pelvis. The cervix of the uterus was normal in appearance. There was a large mass in the pelvis which was apparently attached to the uterus. The mass was not densely hard. A laparotomy was advised with the hope that it might be a large ovarian tumor. At operation, it was found to be a large cancer of the fundus of the uterus with metastasis. The pathologist report was adeno-carcinoma of the uterus.

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*Presented before annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

During the same week of the preceding case a young married woman age 28 was admitted to the hospital because of two attacks of hemorrhage, and a watery inter-menstrual discharge. General physical examination was negative except a marked anemia. The uterus was large and soft except a sense of firmness near the right cornu. At operation, this mass was found to be carcinoma one and one-half inches in diameter.

Duration of symptoms: Definite symptoms varied from two months to three years. Older patients often attribute their trouble to the menopause or to a known fibroid, not realizing that any departure from the normal is a sign of danger. Many of these younger patients have always been somewhat irregular. They have become used to the condition and often disregard real pathognomonic signs. Unfortunately some of these patients have consulted a physician to be dismissed with a prescription but without a searching history and careful physical examination. One of these patients had massage, manipulations, another ergot; both treated without examination until presenting themselves at my office. History of a watery discharge usually means that there is malignancy present, but if doubt remains a pathological examination will clarify the diagnosis.

Cervical cancer may occur in nullipara, but it has not been my fortune to see it where there had not been children borne, dilatations or other irritation to cervical portion of the uterus. Cervical cancer apparently arises from the margin of an erosion or from the depth of a tear. Those appearing to come from the canal, I believe arise from a traumatized or torn area or from the adjacent injured glands. From the few brief statements it would appear that cancer of the cervix is caused by trauma and irritation.

Fitzpatrick believes there is a chemical change due to modern trend of living which may account for the increasing incidence of cancer. While tissue insult undoubtedly is an influencing factor, it cannot explain all nor can it be the great factor in fundal cancer in the young. I cannot assign a probable causative factor. Hereditary tendency coupled with disturbed cell metabolism and a resultant abnormal menstruation seems as plausable as any other theory.

It is not the purpose of this discussion to deal with the details of treatment. I will, therefore, only venture to state that the treatment should be adapted to the case in hand. No treatment may be to the best interest of the patient. However, when it is possible complete extirpation either with or without radiation seems to offer the greatest promise for cure.

CONCLUSION

Cancer of the uterus occurs in the young in a high percentage of frequency. It is not necessarily confined to the years of the climacterium. Cancer can and should be diagnosed early if sufficient care in history taking and examination is given the cooperative patient. No excuse can be offered for an incomplete examination when the patient considers her condition sufficient to bring to the attention of her physician.

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DISCUSSION

HAROLD S. MORGAN, M. D., (Lincoln): I have two points I should like to emphasize which Dr. Smith has already brought out. One is that every woman, no matter what her age, who presents any evidence of abnormal bleeding between the periods, or abnormal flow during the periods, should have a curettage and adequate microscopical examination of the material obtained. If we can get these cases early, we have saved their lives.

In dealing with adenocarcinoma of the fundus, there is a tendency to remove just the uterus and the cervix. There has been evidence to show that there is retrograde movement of the malignant tissue through the tubes, with implantation in the ovaries. When the ovaries have been left, there has been definite metastasis to the ovaries in these conditions.

DR. SMITH, (closing): My only purpose in bringing this paper before you was to try to stimulate, if possible, a desire to make a more thorough examination in these cases, and to emphasize the fact that it is not necessary to have bleeding. When we come to that point, we have reached a point of advanced change. When the lesion breaks down, there is no doubt there has been metastisis and if the watery, pinkish discharge is investigated, it is usually found one of the very first signs of uterine or cervical cancer.

THE LIMITATIONS OF IODINE IN THE TREATMENT OF GOITER*

ROY H. WHITHAM, M. D., F. A. C. S.,
Lincoln, Nebraska.

Iodine has been known to have a relation to goiter since 1815 when Davy discovered that the efficacy of marine products in the prevention of goiter was due to their iodine content. In 1850 Chatin investigated soils and water for iodine and announced that where the iodine content was high goiter was unusual and where it was low goiter and cretinism were to be observed. These observations created a great enthusiasm for the use of iodine in all types of goiter. In 1860 Rillet pointed out the toxic symptoms which follow overdosage of iodine and did it so well that iodine fell into disrepute for half a century. The investigations of Marine on the production of goiter by iodine starvation and the isolation of thyroxin by Kendall in 1914 again aroused an interest in iodine and a few years later Plummer reported the effects of iodine used as preoperative medication in exophthalmic goiter.

In the last decade iodine has come into wide use and has proven a useful and powerful agent in the prevention and treatment of goiter and at the same time an agent capable of producing great harm when used unwisely. Goiter is goiter in the mind of the average layman and a lack of appreciation of special indications for iodine therapy has led many sufferers to fall victims to the iodine containing medicines which are advertised by a conscienceless press. Even physicians tend to associate iodine and goiter to such an extent that they "try out" iodine in the individual case of goiter without giving due consideration to the possible serious consequences. In general the leading students of goiter in this country are in close agreement on the indications and contraindications for iodine therapy. Where disagreement exists it is in favor of more limited use of the drug; no leading authority advocates the use of iodine in all types of goiter without other treatment.

In this paper I wish to present a brief resume of the modern conception of the use of iodine in the prevention and treatment of the various types of goiter. This conception is to a great extent based on clinical experience rather than on any fundamental knowledge of the role played by iodine in the physiology and pathology of the thyroid gland. When this knowledge is complete we can expect to be more rational in our use of iodine but for the present we must of necessity be empiric.

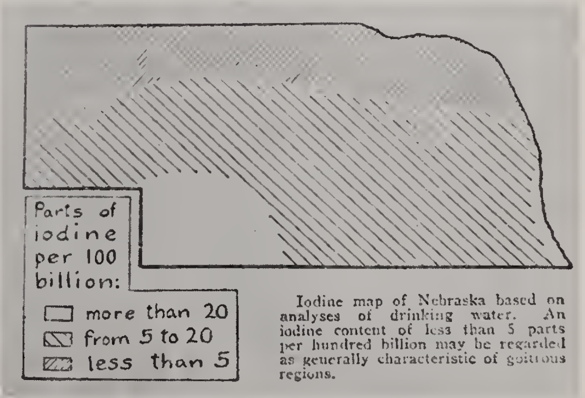
Classification: This discussion will be based on the following classification which is simple in its terms and accurate pathologcally and etiologically as far as our knowledge goes.

THE GOITERS

1. Colloid.
    a. Diffuse colloid goiter (Adolescent type).
    b. Nodular colloid goiter.
2. Exophthalmic goiter.
3. Adenoma of the thyroid.
4. Thyroiditis (Inflammations).
5. Malignant tumors (Carcinoma, Sarcoma).

The terms used here require little discussion. Some confusion may arise in distinguishing the nodular colloid goiter from adenoma of the thyroid, and iodine deficiency which is responsible for the former may play an etiologic role in the latter type. Pathologically the adenoma corresponds to adenomata elsewhere, a tumor having as its essential characteristic tubes or spaces lined with epithelium and surrounded by a definite fibrous wall. The nodule of the nodular colloid goiter has no distinct capsule and is filled with colloid separated by irregular epithelial partitions. It is formed by the coalescence of enlarged thyroid follicles as the gland goes through phases of hyperplasia and rest. Both types of nodule may undergo liquifaction, fibrosis and calcification. The single adenoma usually offers no difficulty in diagnosis; multiple nodules are usually found in the nodular colloid goiter. Inflammations and malignant tumors should be recognized but are no indication for iodine therapy.

Endemicity: Is Nebraska in the goiter belt? This question might be answered by a study of the iodine content of foods and water and by a survey of the state to determine the prevalence



Iodine map of Nebraska based on analyses of drinking water. An iodine content of less than 5 parts per hundred billion may be regarded as generally characteristic of goitrous regions.

From Adolph and Prochaska.

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*Read before annual meeting Nebraska State Medical Association, Lincoln, May 24, 1932.

of goiter. The accompanying map was prepared by Adolph and Prochaska in 1929 from analysis of drinking water in various parts of the state. It shows that in the northern part of the state there is a definite iodine deficiency. No reliable survey of goiter incidence in Nebraska has been made, but general impression would lead one to believe that it is not great enough to be considered endemic. However, goiter is probably more prevalent in the northern than in the southern part of the state, and we may say that Nebraska is on the edge of the goiter belt.

Iodine Therapy: The essential facts regarding the use of iodine in the various goiters may be outlined as follows:

IODINE IN COLLOID GOITER

- I. Prevention.
  - A. Congenital.
    - 1. Iodine to mother if she has normal thyroid.
    - 2. Thyroxin to mother if she has thyroid deficiency.
  - B. Acquired.
    - 1. Iodine unless thyroid has been damaged by disease.
- II. Treatment.
  - A. Diffuse Colloid Goiter—Give thyroxin, iodine is less effective.
  - B. Nodular Colloid Goiter.
    - 1. Iodine may cause hyperthyroidism.
    - 2. Iodine ineffective in curing the goiter.
    - 3. Iodine may be tried preoperatively if hyperthyroidism exists.
- III. Methods of providing iodine.
  - A. Natural foods, e. g. salmon once a week. (Probably best for prevention).
  - B. Iodized drinking water uncertain.
  - C. Iodized Salt—popular but dosage hard to regulate.
  - D. Iodine medicaments.
    - 1. All forms effective in proper dosage.
    - 2. Sodium Iodide 2 Gms. twice a year effective in prevention.
    - 3. Lugols Solution (Iodine—Potassium Iodide) Gtts j to Gtts xxx daily popular in treatment.

IODINE IN ADENOMA OF THYROID

- I. Prevention—Probably iodine not effective; may limit growth.
- II. Treatment.
  - A. Prolonged use may produce or increase hyperthyroidism.
  - B. Pre-operative in toxic adenoma.
    - 1. May cause improvement (50% to 80%).
    - 2. May be ineffective.
    - 3. Sometimes increases hyperthyroidism.

IODINE IN EXOPHTHALMIC GOITER

- I. Prevention—No known method.
- II. Treatment.
  - A. Prolonged use of Iodine alone.
    - 1. Dangerous in most cases.
      - a. Increases hyperthyroidism.
      - b. Renders iodine ineffective in crisis.
      - c. Prevents proper response when given in preparation for operation.
    - 2. Sometimes effective in chronic mild cases. (Should be controlled by frequent observations of basal metabolic rate).
  - B. Pre-operative measure.
    - 1. Reduces hyperthyroidism temporarily.
    - 2. Lowers operative mortality.
    - 3. Decreases morbidity.
    - 4. Saves patient's time and money.
  - C. Post-operative measure.
    - 1. Controls immediate reaction.
    - 2. Prevents regeneration.
    - 3. Decreases number of recurrences.
    - 4. Controls recurrent hyperthyroidism.
- III. Means of Administration.
  - A. Immaterial if dosage adequate.
  - B. Lugols solution most popular. (Minims j to XV t. i. d.)
  - C. May be given by
    - 1. Mouth.
    - 2. Duodenal tube.
    - 3. Rectum.
    - 4. Intravenously (Sodium Iodide).

I believe that surgery is always indicated in the case of typical exophthalmic goiter. However, I realize that the patient is not always willing to accept such advice in the beginning and the physician must carry on for a time with medical treatment. When such a situation arises, iodine should not be employed. If it is used the immediate benefit is, of course, very striking but unfortunately it is not permanent. Most such patients will eventually come to surgery and their risk is definitely increased by this previous iodine administration.

SUMMARY

Iodine is useful in goiter as follows:

1. For prevention of congenital and acquired Colloid Goiter. (Seafood once a week).

2. For the treatment of Diffuse Colloid Goiter. (Thyroid extract).

3. As preoperative medication in Toxic Adenoma. (Lugol's Solution).

4. As preoperative and postoperative medication in Exophthalmic Goiter. (Lugol's Solution).

Iodine has no place in the prolonged medical treatment of typical exophthalmic goiter.

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DISCUSSION

LUCIEN STARK, M. D. (Norfolk): Mr. Chairman: I happen to live in the section known as the "goiter section," and it differs a little bit from your particular figure. We have found it lies north of the Platte, and goes almost across the state until it arrives at Fremont, where it cuts through. Then it remains south and west of the Missouri. We see many varieties from that section of South Dakota. It stops at Chadron. It is particularly noticeable that our water supply up there has taken a great deal out of the soil which has not yet been returned to it.

I want to thank Dr. Whitham for one little thing, and that is the advice against Lugol's solution in exophthalmic goiter. Only as a controlling measure when your patient is in the hospital, and you want to lower the basal metabolic rate, is it advisable to use it.

I had a patient we placed in the hospital. Her basal metabolic rate was over 60. We put her in bed and got her rate down. Her parents decided she was well, and took her home. In five months she was back. They had her at the University hospital eight months trying to get her so they could operate. You can pull them down once with Lugol's. The second time is bad. The third time it is almost impossible.

The use of Lugol's is bad because they make such miraculous improvement, and then proceed to run out on you.

One other thing you will come across when you have toxic goiter complicated with other conditions. When you get them to an operative stage, I think it is a good idea to take the goiter out first. We had a woman with a uterine fibroid and a toxic goiter. We got her down with Lugol's and removed the fibroid, and never could remove her thyroid. I think the first attack should be made upon the thyroid.

I want to thank Dr. Whitham for this excellent paper.

DR. WHITHAM (closing): Thank you for the discussions.

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

J. STANLEY WELCH, M. D., Chairman,
Lincoln, Nebr.

In Three Parts—PART I

The activities of your committee on Medical Education and Hospitals have been directed this past year along the following lines:

I. POST GRADUATE WORK

Further study of the possibility of offering work of this kind to practitioners in the field and at our colleges has been done. A special issue was made of the former at our last general meeting, and a committee was appointed to act. Its reports are recorded in the transactions of the winter Council meeting. Brief review of the work of neighboring states is given later in this report.

II. HEALTH EDUCATION

Health education is urged through lay avenues, with recommendations tending to encourage the members of our State Association to welcome and further the purposes of these lay contacts.

III. EXECUTIVE SECRETARYSHIP

The detailed study of many problems has been more and more convincing that Nebraska, like fourteen other State Medical Associations, must soon have a full-time executive, lay or medical. Accordingly, we have previously recommended and still urge a policy looking to that end. This year we are proposing a plan for your consideration. It contemplates collecting the work of several part-time salaried men into one central office with a full-time salaried officer. We believe more work can be done efficiently and at no increased cost. The experiences of other states warrant this opinion and your investigation. Below we furnish abstract information for your study.

IV. UNDERGRADUATE MEDICAL EDUCATION

as offered in the state is briefly reviewed, including pre-medical and dental mention.

V. NEBRASKA HOSPITAL REPORTS

are reviewed by your committee.

VI. A. M. A. NATIONAL CONGRESS OF MEDICAL EDUCATION AND HOSPITALS

One member of your committee serving as delegate to this congress is reporting the February meeting.

VII. LEGISLATURE

Medical education in the general sense holds a close relationship to the legislation enacted in each state and in the nation. The great importance of this factor is urged upon your attention by reason of several important current happenings:

1. The White House Child Welfare Activities.
2 The Sheppard-Towner substitute bill threatening to come up in Congress.
3. The Federal Hospital plans for expansion.
4. The Five Year Survey of Committee on Cost of Medical Care—just now finished.
5. Our own Legislature meeting again this winter.

VIII. POSSIBLE NEED OF OTHER SPECIAL COMMITTEES

From a general Medical Education viewpoint, your committee sees many additional needs. We respectfully request your consideration of the need for new committees on the following:

1. Medical Economics.
2. Mental Hygiene in the larger sense.
3. Health Examination and the better organization of preventive medical practice in the state.

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Rural post graduate work as proposed last year was postponed because of the lack of management organization and the general economic conditions. Oklahoma reports that the financial depression has necessitated some changes in their program. There have been some deficits. Shorter teaching courses have been given by eminent out-of-the-state teachers, who were obtained for expense cost only. This raised the standard of instruction and the number in attendance was increased. The Oklahoma University Extension Division is contributing to this summer's budget, and the Rural Post Graduate work is going on.

Harold G. Ingham, of the Extension Division of the University of Kansas, says: "Our circuit courses, conducted mainly during the late spring and summer, have shown but little decrease in interest and attendance. We conducted two last summer (Obstetrics and Internal Medicine). Our total enrollment was 236. One course, in Gynecology, is contemplated this year."

Wisconsin is offering a post graduate course in Obstetrics and Gynecology, beginning in June. It lasts twelve weeks and is held in six different towns in Southwest Wisconsin. It is sponsored by the State Medical Society, the University of Wisconsin and its Extension Department. This is exactly the system recommended to the Nebraska State Medical Association last year. Dr. Otto Schwarz, of St. Louis, Missouri, and Dr. Everett D. Plass, of Iowa City, are the teachers. It is a twelve week course for $30.00, and is under the Medical Extension Advisory Committee.

Colorado has given no circuit courses, but one-day teaching clinics have been carried on in conjunction with county and district meetings, with the Executive Secretary's visitation and through his initiative.

Meyerding, of Minnesota, reports: "The short courses conducted by the Extension Division of the University have been successful. This service is of the highest value to our organization."

The University of Nebraska College of Medicine will offer a week's post graduate course from June 6 to 11, 1932, inclusive. The course this year will be offered under the auspices of the Departments of Obstetrics and Pediatrics and will be confined largely to practical work in the wards and clinics. The laboratories are available to the post graduate students during this period. A fee of $10.00 is charged. Class limited to thirty.

These post graduate courses may be offered twice each year if arrangements become possible. Dean Poynter hopes to be able to handle about sixty doctors a year and rotate the different courses in medicine each three years.

II. HEALTH EDUCATION

Your committee is still enthusiastic about the teaching of health, through a full-time central organization of the State Association, contacting with lay groups. This information could easily go out through the Extension Divisions of our universities, the State Tuberculosis Association, Parent Teachers Associations, and by well-planned newspaper stories.

How fortunate it would be just now if we had such an organization in operation to meet and influence the early activities of the White House Child Welfare groups who are organizing their work in Nebraska.

And again how helpful such a full time organization would be when the Committee on the Cost of the Care of the Sick begins this summer to project its five-year survey conclusions upon us. To get these conclusions "hot off the Executive Committee report, and temper" them for the lay press, as Minnesota is now prepared to do, would be service much to be desired.

Innumerable opportunities exist. May I quote from the Indiana State Medical Bureau's report, as follows:

"This Bureau meets once a week and does an infinite amount of work. It sends out weekly an article on scientific medicine to 225 papers and 825 parent-teacher associations throughout the state. It maintains a speaking bureau and provides medical speakers for lay meetings. It supplies also essayists for county medical society meetings. If a county society wants a speaker on any subject, the county secretary writes to the office of the Executive Secretary and the matter is presented to the Publicity Bureau. The Bureau is a real bureau of information and answers all questions that arise. The various newspapers of the state and the various press associations have become accustomed to call the Executive Secretary in regard to questions of medical news. Thus, authentic information upon medical occurrences comes from the office of the Executive Secretary."

Our Public Activities Secretary attempts some of this educational work, but at a great handicap in our present organization. His health work activities are educational. His State Fair Baby and Adult Health Examinations with reports back to the family doctor are educational as are other activities.

(To be continued)

NEOPLASTIC VERSUS INFLAMMATORY-INFECTIOUS DISEASE OF THE INTRACRANIAL CAVITY—REPORT OF AN INTERESTING CASE IN WHICH THE CAUSAL ORGANISM WAS THE INFLUENZA BACILLUS*

W. ANDREW BUNTEN, M. D.,
Cheyenne, Wyoming.

A survey of medical literature with reference to surgery of the brain reveals the fact that much has been written concerning the various syndromes manifested by cerebral lesions, as well as the types of lesions which may be present. For that reason I will not attempt to reiterate what has been so often perused, but confine my present efforts to a report of an interesting case which recently came under my observation. and which illustrates some of the problems with which the neurologist and neurosurgeon is frequently confronted.

CASE REPORT

Mr. D. R., a farmer, aged 46 years, was referred to a Cheyenne surgeon by Doctor J. T. Hanna, of Chugwater, Wyoming, on April 26, 1931. The history obtained from Doctor Hanna and from the relatives of the patient was as follows: The patient had been in normal health until five days before admission, at which time he complained of rather severe, diffuse frontal headache, some difficulty in thinking and a feeling of awkwardness of the right arm and leg. Symptomatic treatment was instituted at home by the attending doctor and, when the patient failed to respond satisfactorily, he was transferred to Memorial hospital, Cheyenne. General examination at that time showed badly infected tonsils, a number or teeth with periapical infection, an organic systolic mitral murmur, and a slight amount of general abdominal distention. Roentgenograms of the chest showed no evidence of disease. The blood pressure was 120 systolic and 80 diastolic; the pulse 74 per minute; the temperature 100 degrees by mouth, and the respirations 16 per minute. Only a brief neurologic check was made by the attending surgeon. A catheterized specimen of urine was highly colored, with a specific gravity of 1.035, with no albumen or sugar, but a few pus cells were found upon microscopic examination. The leucocyte count was 16,000, with 77% polymorphonuclear cells, 18% lymphocytes and 5% transitional cells. The blood Wassermann was negative. Spinal puncture was made upon the day of admission and the spinal fluid estimated to be under extreme pressure (although no spinal manometer was used), and the fluid appeared to be clear. The laboratory report gave a negative Wassermann; no globulin, and 80 cells to the field, 48 of which were lymphocytes and 52 polymorphonuclear leucocytes. The fluid was not examined for bacteria. Symptomatic treatment was again used by the attending surgeon and the patient kept for further observation.

Three days after admission the spinal puncture was repeated and the pressure of the fluid estimated to be about normal. Laboratory examination of the second specimen was not made. By this time definite weakness of the right arm and leg was demonstrated; mental sluggishness was much more pronounced, and the patient had extreme difficulty in expressing himself. By the following day the speech defect had progressed to such an extent that a definite motor aphasia was apparent. At this time, May 1, 1931, I was asked to see the patient in consultation. In addition to the findings already mentioned, the patient was stuporous periodically and, at times, incontinent. Neurological examination showed a right hemiparesis graded minus 3 on a basis of 1 to 4, including the right seventh nerve; absent abdominal reflexes; definitely increased deep reflexes on the right, graded plus 2 to 3; normal deep reflexes on the left side; diminished sensation to pin prick over the entire right side of the body, graded minus 1 to 2; positive right Babinski, Chaddock and Oppenheim reflexes on the right, and an almost complete motor aphasia. We were informed by the relatives that the patient was right-handed. The pupils did not react to light and were extremely dilated, although atropine had been instilled in the eyes several hours before our examination was made. Definite rigidity of the neck was present, graded plus 2 to 3, although, apparently, no pain could be elicited upon carrying out the Kernig test. The patient's mental condition was such that further examination was almost impossible. Ophthalmoscopic examination showed some blurring of the nasal margins of both optic discs with relatively full veins. (Bunten). It was impossible to obtain perimetric fields as the patient was unable to cooperate. Anterior-posterior and lateral stereoscopic roentgenograms of the skull were made and, outside of a peculiar shadow in the extreme left frontal region (which did not resemble either an erosion from a Meningeoma or from the Paccyonian bodies), the x-ray pictures of the head were entirely negative. No involvement of the accessory nasal sinuses or mastoid cells was demonstrated.

DIAGNOSIS

On the basis of the mental condition, with the associated right hemiparesis, hemianesthesia and aphasia, in a right-handed individual, a diagnosis of a left fronto-temporo-parietal lesion was made. In spite of the fact that there were no convulsive seizures and the perimetric fields could not be demonstrated, it was still felt that the lesion was somewhat diffuse and that the temporal region was also involved. However, with the temperature, leucocytosis, and increased cell count in the spinal fluid it was felt that an inflammatory-infectious process was more reasonable than a tumor of the brain. In the absence of a history of sinus or ear infection, with no evidence of involvement of those parts at the present time; with a flushed face and not the usual pallor encountered in brain abscess; with a negative x-ray of the skull; with no change in the fundus picture, and the presence of an elevation in temperature, in spite of the definite signs of localization and evidence of progression, it was considered that an operable abscess of the brain was not likely. A vascular accident could not entirely be eliminated although, with the history and findings, we did not feel that a cerebral thrombosis or hemorrhage was probable. Further observation was, therefore, advised.

TREATMENT AND SUBSEQUENT COURSE

On the afternoon of May 1, 1931, 500 cc of 20% glucose in normal saline was given intravenously in the hope that we might be able to restore the mental condition of the patient. No appreciable change was noted following its administration. The intravenous glucose was repeated on the following morning with the same result. During the day the patient became increasingly more stuporous and less cooperative, and repeated ophthalmoscopic examinations failed to disclose any change in the condition of the optic discs. At this time we considered it advisable to repeat the spinal puncture and examine the fluid for evidence of infection of the subarachnoid space. Before this could be carried out, however, the patient became rapidly worse and exitus occurred, apparently from respiratory failure as the heart continued to beat for several minutes after respiration ceased. Stimulants of caffeine-sodium-benzoate and strychnine sulphate were given during the terminal stage without any apparent effect except to prolong the heart beat. At no time while the patient was under my observation did the blood pressure or pulse pressure vary appreciably from what it was upon admission, except during the short terminal period before death. In order to be certain that an acute increase in intracranial pressure had not occurred, 60 cc of 15% saline was administered while the patient was in coma, and from which no response was obtained.

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*From the Bunten Clinic (Bunten, Bunten, Harris, Miller & Reed), Sixth Floor, Boyd Building, Cheyenne, Wyoming.

POST-MORTEM FINDINGS

After death, permission was secured from the relatives for an examination of the head only, and on May 4, 1931, the skull cap was removed by the pathologist at Memorial hospital. The dura mater was found to be adherent to the skull and was removed with great difficulty. The dural vessels were all distended, but the body had previously been embalmed. Upon incising the dura, the whole exposed surface of the brain showed mildly flattened convolutions with diffuse injection, and filmy adhesions of the arachnoid to the pia mater were present over the entire convex surface. However, no definite localized process was found over the left fronto-parieto-temporal area. No gross evidence of intracranial hemorrhage, thrombosis or cerebral neoplasm was demonstrated. Examination of the brain after its removal revealed a basillar meningitis, the basal cisternae being entirely filled with caseous appearing material. Tuberculous meningitis was suspected but tubercle bacilli could not be found either in the material removed from the basal cisternae or in the fluid removed shortly before death. On the other hand, smears from the caseous subarachnoid contents showed influenza bacilli in great abundance. No other organisms were found. Cut sections of the brain showed the third and right lateral ventricles filled with the same caseous appearing material as was observed previously in the fourth ventricle. In the posterior horn of the left lateral ventricle a localized collection of the same material was found, and which had eroded the posterior tip of the ventricle, extending into the occipital lobe on that side. The anterior portion of the left lateral ventricle was moderately dilated and the interventricular foramen on that side entirely closed by inflammatory adhesions, thus giving a partial unilateral internal hydrocephalus of non-communicating type. Small punctate hemorrhagic areas were observed throughout the entire substance of the brain, and were easily visible with the naked eye. Microscopic sections made from various portions of the brain showed only dilated vessels with marked perivascular infiltration.

COMMENT

By the necropsy findings we are able to offer an explanation for most of the clinical picture as it existed prior to death. The early mental picture was probably entirely toxic and infectious in origin on the basis of the influenzal meningitic process. Increased intracranial pressure developed to some extent later on due to plugging of the fourth ventricle as well as from the left internal hydrocephalus. It is interesting that there was no appreciable change in the optic discs at any time. The right sided symptoms and aphasia might be explained on the basis of the left internal hydrocephalus but, in the absence of choked disc on that side, it is perhaps more reasonable to assume that a localized cystic arachnoiditis, not demonstrable after death and embalming had taken place, played an important part in the production of those symptoms. The hemiparesis with Babinski's phenomena and the hemianesthesia could be accounted for either by direct involvement of the cerebral peduncles by the meningitic process or by pressure of the crus against the tentorium cerebelli secondary to the increased intracranial pressure. The absence of response to dehydrating solutions is indicative of the fact that toxicity and infection were more important in the production of the symptoms than increased intracranial pressure. The absence of cloudy spinal fluid and the difference in intraspinal pressure demonstrated by the two lumbar punctures is probably explained on the basis of plugging of the foramina at the fourth ventricle by the caseous material and adhesions.

In spite of the definite progression, which is usually indicative of tumor of the brain, the absence of choked disc and projectile vomiting, together with the presence of fever, polymorphonuclear leucocytosis, increased cell count in the spinal fluid, as well as the failure to respond to dehydration, seems to justify the method of treatment used (in omitting exploration), and to warrant the diagnosis of an inflammatory-infectious process as opposed to cerebral neoplasm. At no time during the illness did the picture presented seem to be that of a definitely localized abscess which could have been drained, and the postmortem findings substantiated our belief in that respect. Certainly nothing would have been gained by draining the left lateral ventricle or the localized process in its posterior horn when we were dealing with a diffuse infectious involvement of the whole cerebral subarachnoid system.

This case is not reported because it shows any unusual diagnostic ability or judgment, or because the nature of the case was such that it could not have been differentiated with fair accuracy before death. On the other hand, the history and findings were such that several possibilities presented themselves for consideration, and it was only by close observation and repented examinations and tests that we were able to finally arrive at a correct diagnosis.

SUMMARY

1. A case of influenzal meningitis is reported in which the clinical picture was somewhat confusing.

2. The necropsy findings verified the opinion expressed prior to death, namely, that we were dealing with a diffuse inflammatory-infectious process and not a cerebral neoplasm, and in which exploration was not indicated.

TETANUS—A CASE REPORT*

F. M. TUSHLA, M. D.,
Auburn, Nebr.

Miss H. T., housekeeper, single, age 25 years, was first seen September 18, 1932. The following history was obtained:

On August 28, 1932, 3 weeks previous, a splinter from an old board picked up in the cattle shed penetrated and broke off in the patient's right arm in the lower biceps region. A portion of the splinter was removed at that time. The wound failed to heal and 15 days later the patient removed another splinter an inch long. Four days after this she was first seen in the office. She complained of stiffness in her jaws and pain, tenderness, and stiffness in her right arm. The wound was incised, cleaned with oxidizing agents, and antiseptics, and treated with hot salt water packs. Patient refused tetanus antitoxin at this time. On September 20, 2 days later the above symptoms were exaggerated with also aching and stiffness of lumbar muscles. The patient was hospitalized and given 10,000 units of tetanus antitoxin intravenously. Temperature and pulse were normal. On the following day her general condition was about the same. In the morning 10,000 units of antitoxin were given intravenously with also 10,000 units intramuscularly near the wound. Late in the afternoon a spinal puncture showed but slight increase in pressure of cerebrospinal fluid and a slight increase in cell count. After removal of 5 cc. of spinal fluid, 10,000 units of antitoxin were injected. Four hours following the intraspinal administration the patient developed a severe headache, became nauseated, short of breath, and suffered from pain and stiffness of all the muscles of her body. Her temperature 4 hours after was 101 and pulse rate remained around 120 per minute. Extremities became cold and rigid. The foot of the bed was elevated, heat applied to extremities, ice bag to head, sodium amytal given as sedative, and 20cc. of a 10% solution of magnesium sulphate was injected subcutaneously. The patient's whole body gradually relaxed and improvement in her general condition was noted in the next few hours. During the next three days 50,000 units of tetanus antitoxin were given intravenously, subcutaneous injections of magnesium sulphate repeated, and sodium amytal given for rest. Antiseptics and heat were applied to the wound. The patient gradually improved and left the hospital on September 28 feeling well with exception of some soreness and stiffness of her right arm. The wound was practically healed.

The patient at the present time is entirely well. She had received a total of 90,000 units of tetanus antitoxin of which 60,000 units were given intravenously, 20,000 intramuscularly and 10,000 intraspinally.

The reaction after the intraspinal injection of tetanus antitoxin probably was due partly to the relief of spinal fluid pressure, but also I believe to the irritative effect of the serum. I think that the patient's recovery would not have been hindered by the use of a much smaller intraspinal injection than 10,000 units, nor in this case even the entire ommission of the intraspinal treatment. Our research laboratories advocate the use of 3,000 to 5,000 units of antitoxin for each intraspinal injection.

Clinically the patient with tetanus infection suffers from a toxemia. The toxin already about the nerves is to a great extent fixed. Free toxin is found principally in the blood and lymph of the body and in the tissues near the source of infection. Realizing this and knowing that tetanus antitoxin cannot neutralize the toxin already fixed by the nerve-cells, I believe that in our treatment with antitoxin, greater consideration should be given to the intravenous and local injections.

Methods to counteract the action of the toxin fixed by nerve cells would principally be our systemic treatment. This consisting mainly in the upkeep of nutrition, external heat, sedatives and the marked relaxation of muscle spasm associated with injections of magnesium sulphate solution. Though not in itself curative, Smith and Leighton state the case for magnesium sulphate, "Its effect is purely to prevent exhaustion and keep the patient alive and comfortable and permit nourishment until the toxin can be separated from the nerve cells and eliminated."

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*Read before the Third Councilor District Medical Society meeting, Tecumseh, November 10, 1932.

EXERCISE

"Why do you eat in the cafeteria and not in the grill?"

"Oh, the doctor said I should take a long walk before meals."—Temple Owl.

NO SALE

"Doctor" said the man who wanted to work him for a free prescription "what would you give for a sore throat?" "Nothing" said the doctor, "I don't want a sore throat."

A QUESTION IN BUGOLOGY

"If germs germinate in Germany and parasites reside in Paris, what will we find in Cork?" Answer: "Mike-robes".

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Address to the New Year

O good New Year! we clasp
This warm, shut hand of thine,
Loosing forever, with half sigh, half grasp,
That which from ours falls like dead finger's twine.
Ay, whether fierce its grasp
Has been, or gentle, having been, we know
That it was blessed; let the old year go.

Friend, come thou like a friend;
And, weather bright thy face,
Or dim with clouds we cannot comprehend,
We'll hold our patient hands, each in his place,
And trust thee to the end,
Knowing thou leadest onwards to those spheres
Where there are neither days nor months nor years.

DINAH MULOCK CRAIK

CONTRACT PRACTICE AND SOCIAL MEDICINE

After attending the secretaries' and editors' conference in Chicago the 18th and 19th of November it is evident to us that we in Nebraska have little first hand knowledge of contract practice. The extent to which it exists in this state has not made a notable impression on us as it has in most other states.

The program of the three sessions was almost wholly devoted to contract practice and to state medicine. No more interesting meeting was ever held, but the net result was an adjournment without arriving at any concrete plan of attack to the disappointment of many of those present, if their murmurings meant anything. Many thought the American Medical Association should take the initiative while those in authority attempted vigorously to drive home the proposition that to the unit of organization. the county medical society, belongs the duty of taking the initiative. The representatives of the American Medical Association crystallize sentiment; then it is for the units to act, was the dictum put forth. The problem is very complex. Some of the outstanding propositions advanced were: Outside of the industries 405 groups are offering contract service in the United States. Contract practice as such is not unethical unless freedom of action of the individual affected, is disturbed. The patient has the inalienable right to choose his physician. Diagnostic laboratory groups have overreached the physician. They should not compete with the physician—they should assist him. Laboratory diagnosis has been over-emphasized. Clinical training must be reemphasized and diagnosis made much more simple and at less cost to the patient. We have indulged in a debauch of hospital construction with too many stately columns and marble halls and useless glitter and have forgotten the needs and financial capacities of the white collar man.

The American Medical Association is unalterably opposed to political control of Medicine. Its public policy is the good of society. To the true physician wealth is not the goal of life; but a competence is a needed goal for any physician to be able to educate his children and make provision for his declining years.

The Georgia plan of regulating contract practice appealed strongly to many delegates. Physicians desiring to engage in contract practice submit their plan to the censors of the county society for their approval and by conference between the parties the objectionable features, if any, are removed before the plan is approved. This plan is said to work very well in Georgia and is worthy of consideration in other states. That a Public Relations Committee be created by the American Medical Association was suggested, as also the proposition that a properly prepared brochure on the entire subject of contract practice and social medicine be presented to the profession.

It seems to this writer that social medicine is upon us and that some of our energies should be enlisted toward its direction rather than to adopt the tactics of the Pope's Bull against the Comet.

Dr. William Allen Pusey, past President of the American Medical Association, presented Twelve Points in the Principles and Policies of Medicine, which follow:

PRINCIPLES

"1. Medicine is the trustee of society in the care of the sick and injured; its policies must always be governed by this fundamental fact.

"2. The good of society must be the sole aim of its public policies and the good of the patient the first consideration in the relations between physicians and patients.

"3. Medicine's first responsibility must be to see that its services are available to all men.

"4. The public interest demands the most competent medical profession possible. Medicine must be an attractive profession to compete successfully with other professions for the ablest young men.

"5. In the sense that every calling from which a living must be gained is a business, medicine is a business; it must accept the competitive conditions of practical life but, as a profession of high ideals, it must seek to prevent selfish commercialism.

"6. Experience has shown that the vast majority of disease conditions afflicting man can be most satisfactorily and economically diagnosed and treated by a competent individual general practitioner.

RESPONSIBILITIES

"7. The services of medicine include (a) the practice of medicine; (b) the promotion of preventive medicine and the public health; (c) the fostering of research and the increase of knowledge.

"8. Medicine's chief concern must be for the individual physician; the service rendered by individual physicians in the aggregate constitutes the great bulk of medical service. The quality of service which is given depends on the competency of the individual physicians who give it.

RIGHTS

"9. The medical profession asks for its practitioners: freedom of opportunity to develop to the limit of their individual capacities.

"10. It asks a career of independence under conditions of free and dignified competition.

"11. It asks remuneration sufficient for reasonable comfort for the individual and for his family.

"12. In its ideals of independence, medicine has a right to control its own affairs. Its history of capacity and altruism justifies this claim."

MEDICAL CARE OF THE SICK POOR

It is becoming increasingly evident that the medical profession has fully awakened to its rights under the law in regard to the medical and surgical care of paupers and indigents, due, in part at least, to the publication in this *Journal* of the illuminating editorial of "Poor Man Without Funds, Property or Credit, Ward of County, not of Doctor." Press reports also indicate a willingness of an increasing number of county boards to assume responsibility for the medical and surgical care of such persons, which is very encouraging.

A hitch seems to develop in some cases over the basis of payment and on this matter there seems wide divergence of opinion that threatens agreement. Taking rural Nebraska for example —In one county the county medical society offered to take care of paupers and indigents on a basis of $3.00 per call, plus mileage, other work in proportion; in another county the county board offered to pay on a basis of $1.00 per call. This is a rather wide difference and probably both parties would be willing to some modification of the suggested basis. Let us not forget that we are in a period of economic stress the like of which none of us have ever experienced; that county boards, willing though they may be to pay, are hampered by shortage of funds due to the inability of the taxpayer to meet his obligation to the county and state; that when county boards agree to a willingness to assume the financial obligation of medical and surgical care of pauper and indigent, the financial reward is certain and half a loaf is better than no bread. In other words it is better to work for a smaller fee sure to be paid, than to get nothing. The medical profession can afford to be not only reasonable but liberal and meet the issue squarely as man to man—the principle of obligation to pay having been admitted—remembering that it is a condition and not a theory that confronts us at this time.

SUPREME COURT DECISION ON VIABILITY

The beating of a new born baby's heart constitutes life even though the baby never breathes the Nebraska supreme court ruled last month in the case of Stuertz vs. Stuertz in settling a controversity over the estate of Richard Stuertz, who was killed by falling down an elevator shaft in 1929.

His parents, Casper and Elizabeth Stuertz, had claimed a half interest under Nebraska laws in the estate, estimated at $11,000. on the ground the baby girl born after his death was born dead.

The trial court held the baby had been born alive because of the heart beats.

Judge James R. Dean, who wrote the supreme court opinion, said that where the vital functions of a child had not irrevocably ceased it could not lawfully be pronounced dead at birth and for every legal purpose such child was alive at birth.

The baby after birth at no time voluntarily breathed. It made no sound and moved no muscle, but the heart tones were heard for 20 or 30 minutes in response to artificial respiration.

The importance of this decision can be readily grasped.

COMMENTS ON THE REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

Varying reactions have come forth from lay and medical journals as a result of the publication of the report of the Committee on the Cost of Medical Care, most of them we believe against the report of the majority.

A state medical journalist of the less important group of journals, we hesitate to project our philosophy into the discussion.

The *Journal of the A. M. A.* has attacked the majority report rather vehemently which we regret, stating among other things that from the composition of a part of the committee the report as given was plainly foreseen; to which the *New England Journal of Medicine,* the editor of which was a member of the majority of the committee, replies "we may properly declare that the criticisms of the majority report by the *Journal of the A. M. A.*, come as no surprise to the members of the Committee."

Our first reaction to the Report was that it would exert a tremendous influence in favor of state medicine; mature later reflection has modified this considerably. Few physicians are in favor of state medicine as found in European countries. Most physicians see the need of some better method of caring for the poor and the white collar class. We believe, with others, that few people suffer from actual want of medical care under the prevailing system. Rarely does radicalism prevail: it does call sharp attention to problems that cry for solution. Is it not possible that out of this study and from the recommendations made may develop a policy entirely wholesome to the profession and the laity?

WOMAN'S AUXILIARY, MADISON SIX COUNTY SOCIETY MAKES CONTRIBUTION TO MEDICAL STUDENT LOAN FUND

The Woman's Auxiliary to the Madison Six County Medical society at the November meeting decided to contribute $75.00 to the Medical Student Loan Fund of the Nebraska State Medical Association and a check for that amount has been received by the custodian of the Fund.

This gesture by a local auxiliary is deserving of more than passing notice. It shows that these women do some serious thinking on possible ways to do good. This year of all years the Medical Student Loan Fund has urgent need for money to assist worthy junior and senior medical students in their struggles to keep going in their college work.

The auxiliaries of the state can by concentrating on some worthy welfare work do a tremendous amount of good and thereby doubly justity their existence.

The Medical Student Loan committee desires hereby to thank the ladies of the Madison Six County Auxiliary for this generous and useful contribution.

INSULIN AS A STIMULANT OF APPETITE

There have been many fads in medical practice that have come, held sway for a day, and vanished like wreaths of smoke. As scientific discoveries are made which seem to have a bearing on problems which have confronted practitioners since medical history began, we seize upon them, inspired by the hope that here finally the solution has come for the old difficulty with which we and our ancestors have wrestled; that now we finally have the remedy which will clear it all up for us forevermore. The track of medical progress is strewn with the wrecks of such hopes.

Is insulin for appetite, nutrition, and underweight going to become another one of these red-hot panaceas? Somewhere, in some newspaper article, mention was made of its use in this connection. The use that was thus made was either experimental or quite properly indicated in its own particular instance. But like a prairie-fire, the news is spreading, and the practitioners' offices are besieged with desperate or hopeful people who want to acquire appetites or build up weight without working for it. They saw it in a newspaper, and they expect their doctor to use the new method to cure all of their accumulated ills. (Or, even worse, they expect an insulin specialist to arise and to accept an insulin practice which will be the refuge of all those who have been to regular practitioners and failed to get the results they wanted, largely because they didn't have the backbone to follow instructions.)

Undoubtedly insulin with carbohydrate is a contribution to nutrition, and will have its place in situations that are difficult to handle by the ordinary common-sense methods. But these cases will be rare; and the majority of cases of chronic anorexia will still have to be handled just as the well qualified practitioners of a hundred or two hundred years ago handled them successfully.

Appetite is principally a habit. The overweight person who would like to lose weight, who would give anything to lose weight, cannot break his habit of eating too much. The underweight person, whose gastro-intestinal musculature has become so atonic from inanition that it can hardly support the weight of a good meal, much less handle it in the necessary way, finds it difficult to train himself into the proper habits of eating. The plump, solid, well-nourished person will sit down in front of a good substantial meal, and the meal melts away without effort; one hardly realizes how it went or where. The thin, undernourished person who needs cod-liver oil and yeast and insulin and other charms and fetishes will sit in front of his plate, and will push the food back and forth about his plate, and stir it around, and turn it over, and drag it back and forth, and build little castles and landscapes out of it, but has a terrible hard time actually getting any of it into his mouth.

The only general and dependable cure for anorexia that we shall ever have will be a common-sense attitude toward this thing on the part of the physician, and an ability on his part to take his patient through the necessary drill and training to build up the proper habits of putting enough food into his mouth, and of disregarding the inconsequent and transient distress which the patient feels because of his muscular atony after he has eaten. Common-sense helps; a historical perspective of all the will-o'-the-wisps that we as medical men have chased after and abandoned and forgotten, also helps, in handling our cases.

—MILES J. BREUER, Lincoln.

OIL PAINTING OF DR. J. P. LORD UNVEILED AT CLARKSON HOSPITAL

An oil painting of Dr. John Prentiss Lord, Omaha orthopedic surgeon, the gift of the hospital staff, was unveiled in the corriders of Clarkson hospital, December 4, with appropriate ceremonies, in the presence of several hundred medical and lay friends.

The exercises were in charge of Dr. John B. Potts. Those participating in the program were Mr. William Richie, Jr., of the hospital board; Dr. H. W. Orr, representing the orthopedic hospital, Lincoln; Dr. A. W. Tyler, representing the faculty of Creighton Medical College of which Dr. Lord was formerly a member; Dr. C. W. M. Poynter, dean of the Nebraska University College of Medicine, and Bishop E. V. Shayler of the Episcopal Diocese of Nebraska.

The speakers traced the life of Dr. Lord from his boyhood country home on the Rock river in Illinois, through public and private schools, his graduation from Rush Medical college in 1882, his postgraduate work in New York and in Berlin and Vienna; his location in Omaha as a general practitioner, the development of a surgical practice and his decision to devote himself wholly to orthopedic surgery which has been his major life work and on which he has builded his monument, and his teaching in the medical colleges of Omaha.

Appreciation of his great service at hospitals and medical schools was voiced by all.

The portrait, a beautiful life size one, is the work of Mr. J. Laurie Wallace of Omaha.

"Did you have measles worse than Bobby Jones?"

"Much worse, grandma. I had 'em during school vacation."—Tit-Bits.

DR. A. F. JONAS HONORED BY OMAHA-DOUGLAS COUNTY MEDICAL SOCIETY

The Omaha-Douglas County Medical Society has a custom of giving an annual banquet and of honoring on such occasion, members who have given distinguished service over many years. On December 13, at the Fontenelle hotel, 150 being present, Dr. August Frederick Jonas was the honor guest. Dr. B. M. Riley, president, complimented Dr. Jonas on his long and distinguished service as a surgeon in Omaha, on his scholarship, on his distinguished citizenship, his interest in community service, in education, welfare work, etc., and wished him many happy years to follow.

DR. A. F. JONAS

August Frederick Jonas was born at Arlington, Wis., June 12, 1858. After his preliminary education in the local schools he attended Bennett Medical College, Chicago, from which he was graduated in 1878 and thereafter practiced at Sauk City, Wis., before he was of age. Later he went to Europe, and was graduated from Ludwig-Maximillian University at Munich, 1884. He also did postgraduate work at Halle, Munich, Berlin, Vienna, Paris.

He came to Omaha in 1887 and almost at once became prominent in medical activities. For three decades he was professor of clinical surgery at the Omaha Medical College and its successor the Nebraska University College of Medicine. On his retirement he was made Professor Emeritus. He was chief surgeon of the Union Pacific railroad for thirty years, carrying on in the meanwhile an extensive private surgical practice. He made the present Methodist Hospital possible by contribution of half ($30,000) of its original cost, and was chief of staff during his entire active career.

He was president of the Nebraska State Medical Association, 1905-06; Missouri Valley Medical Society 1894; Pan-American Medical Society 1897; Western Surgical Society, 1899; Vice President American Railroad Surgeons Society, 1901. He was sometime Vice President of the American Medical Association and delegate from the American Medical Association to the International Medical Congress at Paris in 1900.

He is a member of the American College of Surgeons of which he was one of the founders. During the World war he was the governor's aid. He has contributed many papers on surgical subjects. He retired several years ago.

A LL. D. degree was conferred upon him by the University of Nebraska in 1928.

Dr. and Mrs. Jonas have travelled extensively in Europe, Egypt and the Near-East. They have three children, a daughter and two sons. The older son is a senior in Harvard Medical School.

HOLT COUNTY PHYSICIANS AND THE COUNTY BOARD

What the Holt county profession thinks about it is evidenced by the following resolutions presented to the county board at a recent meeting:

Resolved that $2.336.00 which is the total amount expended in Holt county for medical, hospital, and nursing fees is a very nominal sum. Of this amount $1,700.00 is the total amount spent for medical fees. Thus the per capita expenditure in Holt county which has a population of 16,000, is about 10 cents per head. An additional $636.00 was expended for hospital and nurses fees in the care of the poor. Thus the per capita expenditure for medical, hospital and nursing fees is less than 11 cents per head.

Whereas, it is impossible to have a county physician or a physician in each community,

Be it resolved that we favor continuing with the present method and allowing a discount of 33⅓ per cent from the regular charge provided that the claims be allowed at the first meeting of the board. Any bills not allowed at the first meeting of the Board after filing to be allowed in full. List of county charges for each physician list to be revised quarterly. It was further agreed that this list show all county charges, mothers' pensions, etc.

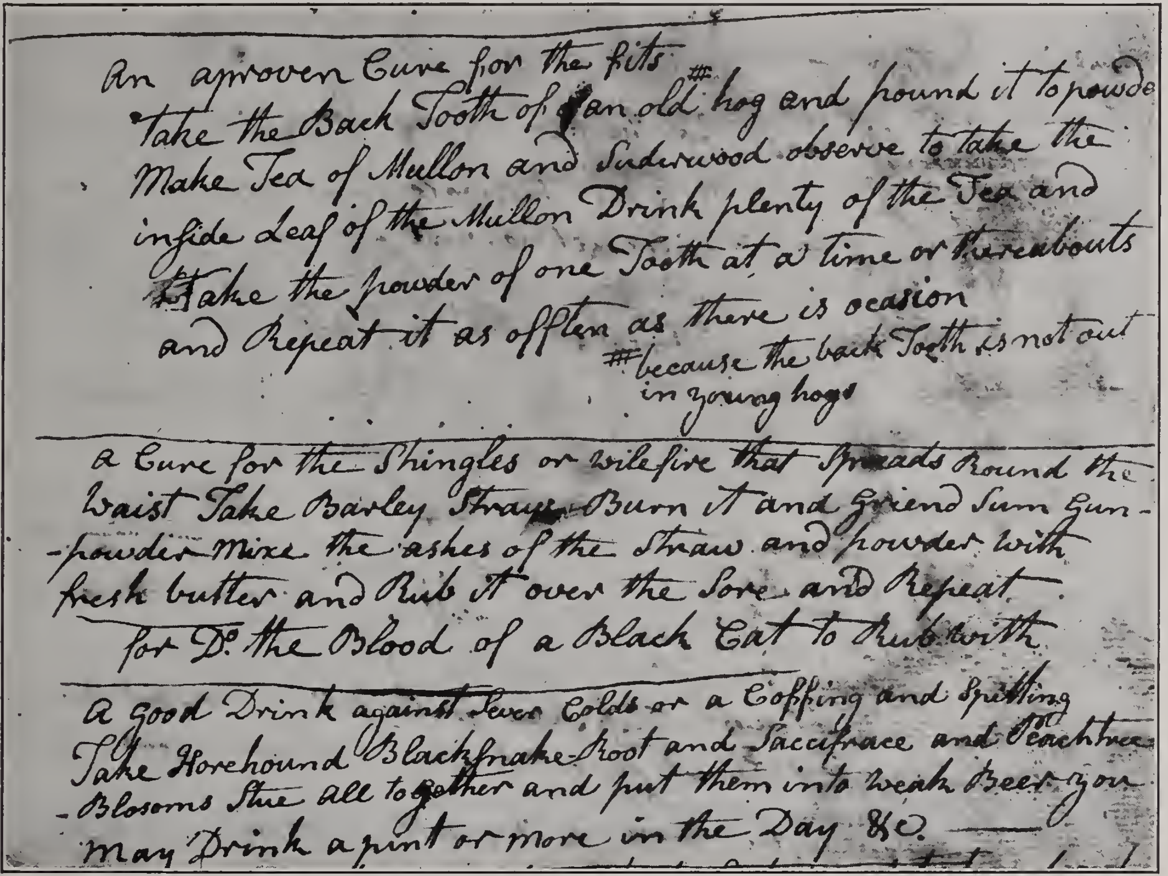
Be it resolved that when a physician calls a member of the county board regarding medical attention to an individual or family unable to pay and the county commissioner agrees to accept the case as a county medical or surgical charge that he issue an order to the doctor granting authority for such treatment, said order to accompany the doctor's claim to the County Board, the same to be paid without further argument providing the charge is in conformity with those established by these resolutions.

The following is the medical fee schedule for Holt County and now enforced as follows:

House visits, $3.00, plus mileage.

Confinement, uncomplicated, $25.00 plus mileage. Additional charge for complicated cases.

The county board has refused to pay any medical bills whatever.



An aproven Cure for the fits
take the Back Tooth of an old # hog and pound it to powde
Make Tea of Mullon and Sudurwood observe to take the
inſide Leaf of the Mullon Drink plenty of the Tea and
Take the powder of one Tooth at a time or thereabouts
and Repeat it as offten as there is ocasion
#because the back Tooth is not out
in young hogs

a Cure for the Shingles or wilefire that Spreads Round the
Waist Take Barley Straw Burn it and Griend Sum Gun-
-powder Mixe the ashes of the Straw and powder with
fresh butter and Rub it over the Sore and Repeat.
for D° the Blood of a Black Cat to Rub with

a Good Drink against Sever Colds or a Coffing and Spitting
Take Horehound Blackſnake Root and Saccifrace and Peachtree
-Blosoms Stue all together and put them into weak Beer you
May Drink a pint or more in the Day &c.

PIONEER HOME REMEDIES*

The *Nebraska History Magazine* in its most recent number publishes a record of pioneer life in Pennsylvania from 1753 to 1820, containing among a lot of other information a collection of home remedies used at that time.

For its historic interest we republish a number of them below. The editor of this *Journal* has a very distinct recollection of some home remedies used in the seventies of the last century and no doubt some of the older readers have similar recollections. We would like to make a collection of such home remedies for publication in this *Journal* at some later date, and we solicit your contributions:

"For a Headack take a little Tansy pound it well and wet with whiskey or camphire and whiskey and lay it to the open of the head and take a dram of the whiskey very strong of the Tansy.

A Cure for Snakebite Horehound and Planton. Take equal quentitys. Pound it well squise out the juce and give it inwardly (and apply the hearbs to the wound tryd on a dog and succeeded.

A Cure for Toothake take 3 or 4 spoonfuls of soft soap and 3 or 4 inches of tobacco and handful of soot boyled together and thickened with bran and layd warm to the cheek it will give ease in a short time.

For the Crick in the Neck vinigar and patch grass melted together and very hot rubbed into the horses body against the hare and rubed with soap and vinigar together afterwards A never failing cure for any cold cough hoarseness and wheezings &c., in man and beast.

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*Cut by courtesy of Nebraska Historical Society.

Hoarseness Take onions bake them in their skins untill they are quite soft then take the pulp and add to it fresh butter and salt—for a man eaten with bread in the morning fasting is a cure for any hoarseness.

To take out a wart—grind chalk very fine and mix it with water bind it on all night and repeat as oft as there is ocasion it will deaden and bring out.

A Cure for Sinew Strane take a live cat and cut off hir head and cleave her down the chine and clap her hot to the strane bowel and all keep it on 48 hours the effect is grate.

Cure for Rumitism fill a New Crock with the spaun of frogs buiry it 2 feet deep in the ground well covered that no Rain or wet may get in let stand 2 months it will turn to oile which will cure by often rubing the parts &c., (Indian cure)

A Cure for Canser in man Take the reddest and strongest onions bruised, very small and well mixed with the best sqlt butter put on plasterwise for 24 hours at a time and repeat 3 times &c.,

It is supposed to be a small worm which eats away the flesh."

TUBERCULOSIS HINT NO. III

The prognosis of the early case depends far less on how much there is in the patient's lungs, and far more on how much there is in his head.

—MILES J. BREUER, Lincoln.

DERMATOLOGIC HINT NO. XI

Lesions of bizarre type or unusual location in patients of nervous makeup are often self induced.

—DONALD J. WILSON, Omaha.

MEDICO-LEGAL DISABILITIES V

An accident is an unusual, unforeseen or unintended happening or event. An injury is a result, of some force, either external or internal, manifested by a recognizable and measurable disturbance of function. The cause may be accidental or non accidental. An accident (the cause) may or may not produce an injury (the result) and the injury (the result) may or may not produce a "disability."

—CZAR JOHNSON, Lincoln.

OBSTETRICAL AND GYNECOLOGICAL HINTS NO. XI

A properly fitted pessary. after manual replacement of a retroversion, is a valuable diagnostic aid. If the backache is not relieved, then the retroversion was not responsible. The back itself and the posture of the patient should be studied.

—HAROLD S. MORGAN, Lincoln.

ANNUAL DUES

Your annual dues amounting to $8.00 should now be paid. Please send this amount plus your county society dues to your county secretary at once.

PAPERS FOR ANNUAL PROGRAM

If you wish to read a paper before the annual meeting May 23-25, please send your name and title to Dr. R. B. Adams, Secretary, Center McKinley Building, Lincoln, Nebr.

EDITORIAL PARAGRAPHS

The Nebraska Section, American College of Surgeons, will have its annual meeting in Lincoln early in the new year.

McKesson and Robbins are new advertisers this month. Read the ads and remember the advertiser makes the *Journal* possible.

The annual meeting of the Nebraska State Medical Association for 1933 will be held in Omaha, May 23, 24, 25, at the Fontenelle Hotel.

A meeting of the Kansas City Society of Ophthalmology and Otolaryngology was held at Rochester, Minn., December 2 and 3 and the entire program apparently was put on by members of the Mayo clinic staff. An excellent attendance is reported.

A new kind of glass used for the bulbs of ultra violet lamps makes it possible to get a sunburn in twenty minutes merely by the flip of a switch, according to Dr. J. W. Marden, Assistant Director of the Research Laboratories of the Westinghouse Lamp Company.

Several cases of trichinosis resulting in two deaths have occurred recently as a result of eating insufficiently cooked infected pork at a social gathering of neighbors. Cured raw meat in the form of sausage is considered a delicacy by many people of foreign extraction. The danger lurks in such meat.

Dr. William Engelbach, pioneer endocrinologist. died at Springfield, Ill., recently. Many members of the Nebraska State Medical Association will recall Dr. Engelbach's appearance on the program at an annual meeting held in Omaha in 1925. He died of heart disease at the age of fifty-five years.

Dr. John MacKenzie Brown, Los Angeles, has been appointed professor and chief of the department of laryngology, rhinology and otology in the University of Southern California School of Medicine. The particular interest in this item is that Dr. Brown was a general practitioner at Friend, Nebr., before moving to California, about twenty-five years ago.

For special reasons we are publishing the Report of the Committee on Medical Education and Hospitals in three parts—beginning with this number. The several parts of this report deal with matters vital to organized medicine to every individual doctor and they should be carefully read. We appoint members to committeeship with a definite object in view. Most appointees take the assignments seriously and their reports merit our careful study—which, sorry to say, they do not always receive.

Several deaths have occurred from botulism poisoning in a nearby county, the result of eating some home canned vegetable. It cannot be too strongly stressed that any home-canned food, where the can shows evidence of swelling, bulging or escaping gas, should be destroyed. In all cases where home-canned food is being used, even though neither gas nor bulging is detected, safety lies in thoroughly cooking such food. Boiling actively for five minutes will destroy the toxin produced by the botulinus bacillus.

The printer of this *Journal*—The Huse Publishing Co.,—announces a new reduced price for reprints. We have recently had occasion to compare the prices of reprints of articles published in the states surrounding ours and also the prices of the *Journal of the American Medical Association*. Prices vary, no two being the same; but the prices charged by our printer are not out of line with the others. We may add that the *Nebraska State Medical Journal* is not financially interested in the reprint business; but we are interested in having our authors satisfied.

The American Association for the Study of Goiter, for the fourth time, offers Three Hundred Dollars ($300.00) as a first award, and two honorable mentions for the best three essays based upon original research work on any phase of goiter presented at their annual meeting in Memphis, Tenn., May 15th, 16th, and 17th, 1933. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter. Competing manuscripts must be in English and submitted to the Corresponding Secretary, J. R. Yung, M. D., 670 Cherry St., Terre Haute, Indiana, U. S. A., not later than April 1, 1933. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

The Committee on the Cost of Medical Care reports that in the boom year, 1929, one-half the physicians of the United States received a net income of only $3,800 or less, while more than 21,000 practitioners—15 per cent of all the physicians in the United States—derived less than $1,500 from their professional activities, and more than 4 per cent lost money as a result of their year's work, according to figures based on an exhaustive study of the incomes of physicians in the United States contained in a report just made public.

The report states that although a number of physicians have exceptionally large incomes, it was found that a larger proportion of physicians have inadequate incomes than have members of any other professional group.

Cumulative evidence that the county board cannot turn back upon the proper claims of a poor person is furnished by a recent case in Banner county:

"Dr. A. L. Miller of Kimball was awarded a judgment of about $170 in district court when Judge Nisley found that Banner county was liable for a hospital bill incurred through an operation performed upon Clarence Hooley, a minor, whose mother resided in Banner county.

The county commissioners disallowed Dr. Miller's claim and the latter brought suit. The county contended that young Hooley, although a minor, was working in Kimball county at the time and was a resident there. It also contended that he was making his own living, was not a pauper and the commissioners had never promised to pay the bill. The plaintiff held that Hooley's residence was actually in Banner county, as was his mother's, and that his circumstances would not permit him to pay."

SIMILIA

Diner (to waiter with black eye)—"Why don't you apply a piece of steak to it?"

Waiter—"It was a lump o' steak the gentleman threw at me."—Punch.

NECROLOGY

George A. Sloss, DeWitt; Michigan College of Medicine and Surgery, Detroit, 1899; for thirty-one years a practitioner at DeWitt; died following an operation for appendicitis at a Beatrice hospital, November 24, aged fifty-nine years. He was unmarried. Dr. H. J. Sloss of Holdenville, Okla., is a brother.

William B. Kern, Los Angeles; Missouri Medical College, 1887; St. Louis College of Physicians and Surgeons, 1900; former member, Nebraska State Medical Association; for some years superintendent of the Nebraska State Hospital for the Insane at Ingleside; later superintendent of the California State Hospital at Norwalk; neuropsychiatrist on the faculty of the College of Medical Evangelists, at Loma Linda, Calif., died October 14, 1932, of pernicious anemia, aged seventy years.

Sommers T. Pettingill, Seal Beach, Calif., retired; Medical Department, Iowa State University, 1879; practitioner at Ft. Calhoun, Nebr., for about forty years—from date of graduation until about twelve years ago, when he moved to California; died about November 20, 1932, aged sixty-six years.

AUXILIARY NEWS LETTER

Nebraska Auxiliary ladies may justly claim a certain pride in the new President of the National Auxiliary, Mrs. Edna B. Percy of Los Angeles, who succeeded to the presidency vacated by the death of Mrs. Freeman of Philadelphia. At the time of the Detroit meeting of the A. M. A., Mrs. F. A. Long of Madison, was one of the Vice Presidents of the National Auxiliary. The Longs of Madison and the Percys of Los Angeles have been friends for some years. It was therefore quite natural for Mrs. Long to appear before the nominating committe and suggest Mrs. Percy for Vice President, which she did,—and see what has happened! Mrs. Percy is well qualified by previous work as president of the California Women's Auxiliary, one of the largest and most important in the country, to succeed to the Presidency of the National Auxiliary.

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The Auxiliary of the Madison Six County Medical Society held a business meeting at the regular session of the society in November and voted to contribute $75.00 to the Student Loan Fund. This money was in part raised by getting Hygeia subscriptions and the balance from the regular yearly dues. The contribution was made in honor of Mrs. F. A. Long who is a member of the Six County group.

* * * * * *

The Tri County Medical Auxiliary is holding a doll bazaar for the benefit of St. Francis Hospital, the proceeds to be used for the Pediatric Department. Many Class A hospitals in the United States were asked to contribute a doll dressed in the uniform of the student nurse of their institution. The results are very gratifying. Thirty dolls have already arrived and more are coming daily. They expect 100 or more by December 15th, the opening day. Many of these dolls are beautiful and are completely dressed in uniform, even to the tailored blue cape with gold lettering on the collar.

This auxiliary hopes to make a goodly sum for a very good cause.

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On December 21st the Board of the Lancaster County Auxiliary had tea with Mrs. Harry Flansburg, President. The question of entertainment for the year was discussed with regard to the three meetings planned. The first meeting of the year was a tea on November 29th at the home of Mrs. Everett Angle. Many of the ladies brought their sewing, others played bridge. At the close of the afternoon Mrs. Flansburg presided at a short business meeting.

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Members of the Richardson County Medical Association and its Auxiliary held a joint 6:30 o'clock dinner November 23rd at the home of Dr. and Mrs. O. F. Lang. Thirty-three guests attended the dinner. Following the dinner the program given by the Medical Association was held jointly with the Auxiliary. After the medical program the auxiliary held a short business meeting and a talk concerning the work of the organization was given by Mrs. C. W. Pollard of Omaha, state chairman of legislation and programs of the Auxiliary. Dr. E. R. Hays also talked on the same subject. Mrs. Harrison a member of the Tuberculosis Camp Committee spoke to the ladies about the camp and the great need for it at this time.

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Mrs. Clyde Roeder and Mrs. Chas. Pollard of Omaha, also Mrs. H. R. Miner of Falls City, attended the December meeting of the Gage County Medical Society at Beatrice. Mrs. Pollard gave a talk on the County Health movement and explained the work of the auxiliary. Mrs. Miner told of the plans of the organization.

The Society voted in favor of organizing an auxiliary. Mrs. W. F. Wildhaber was elected President. She will appoint her secretary.

TUBERCULOSIS ABSTRACTS

Emotion that remains bottled up exerts a harmful physiological influence, especially so on the tuberculous person. Unfortunately, he cannot work off his emotions or shift his interest to another scene. The disease itself inevitably brings about emotional strains involving business relationships, breaks in family ties, and financial worries. In his segregation and enforced leisure the patient broods—and his problems become emphasized and distorted. To adjust the patient's state of mind is an essential therapeutic requirement in the "cure." Mary B. Eyre has studied the role of emotion in tuberculosis from the psychological approach. Her findings, presented at the latest annual meeting of the National Tuberculosis Association, are briefly summarized.

THE ROLE OF EMOTION IN TUBERCULOSIS

The human organism responds as a whole to its internal and external environment. We need not separate mind and body (much less soul and body), but regard the human individual as trying to get along with the use of all of his functions, endowment, and experience.

His functions include not only his feelings, but the use of his brain. Stirred-up feeling is known as emotion, and implicit in emotion is energy, which is always dynamic. The individual who experiences emotion is therefore ready to act. Researches have demonstrated that the sympathetic division of the autonomic nervous system, through the adrenal glands (and possibly other tissues), prepares the body for activity at the same time that the individual is under emotional stress. If the discharge of this energy should not take place, then the preparatory processes become disturbers and disrupters of the organism.

Each one of us needs at least to feel safe. Anything which menaces our bodily, mental, or financial security, sets up at once a state of tension, which disintegrates our assembled forces in fronting our world. In the weak and timid person, he who has never learned self-reliance or known what it means to think well of himself by reason of success due to his own efforts, the sense of his inadequacy is always his first response. To tell him "not to worry" and to "control his emotions," far from helping, usually increases his tension without showing him how to release it. Something detrimental does happen to all responses of the individual, through worry; something beneficial takes place as inevitably through the building up of the sense of security. Metabolic rate of plus 124, with pulse rate of 112, was changed to basal rate of minus 3, pulse 72, within twenty-four hours, in an individual whose anxiety over her financial safety was relieved meanwhile.

Of all the emotions, fear seems to be the predominating one. The characteristic optimism which is generally attributed to tuberculosis was found in a number of observed tuberculosis patients to be compensatory to an underlying fear and dread of nonrecovery, which they resolutely refused to admit to themselves or to acknowledge to others. Is the hopeful state observed in many tuberculous patients due to a specific toxin of the tubercle bacillus? It is more simply explainable by the defense mechanism aroused by fear, superimposed upon the general biological stimulation which is the body's reaction against this bacillus.

MEASURING EMOTIONAL STATES

Even though measures of precision have not yet been evolved for emotional states, it is a step in the right direction to assemble the evidence, and to compare symptoms involving strong feeling, with objective physical findings. Such correspondence can be observed in the physical field, in rise or fall of temperature, in metabolic index, and in functions governed not only by the vegetative nervous system, such as digestion and elimination, but by the sympathetic division of the autonomic as well, including, as Cannon has shown, heart acceleration, respiratory change, pilo motor reflex, endocrine activity, increased blood sugar and hormone liberation. To these may be added as possible signs, the healing or increase of cavitation, and other reparative or destructive processes of the body, as revealed by X-ray and chemical analysis.

It would seem reasonable to ask of any measures which set out to regulate emotion, that they should prove their validity by producing an effect upon the general bodily well-being of the patient.

Eighty-seven tuberculosis patients were studied. Although a complete comparison with physical symptoms was not made, it would be possible to check the records of emotional behavior with the accurately kept physical histories. The net results of this study, based on the answers to four inclusive questions, were in terms of social adjustment.

Fear was found to be the chief factor in emotional instability, present, to some detectable extent, in all but two instances. One of these was a patient who had been told that as "a light case" she would be ready to go home, as soon as she recovered from an appendectomy which had brought her to the acute unit. Her attitude was quietly relaxed, without tension of any sort, either of marked cheerfulness, stoicism, or depression. It was almost startling to find a patient who felt no need of any form of defense against fear.

No adequate explanation can be offered for changes in temperature which accompany emotional excitement, or its release, other than the relationship between the autonomic nervous system and endocrinal activity. Cannon points out that homeostasis of body temperature is regulated in part by the sympathetic, which also influences the output of adrenal and thyroid and pituitary glands, the governors of muscular tonus, and indirectly, oxygen intake. Muscular action results in heat production, which warms the blood; shivering, pilo-motor reflex, and sweating, are all heat regulating devices directed by the sympathetic, which also responds to emotional excitement, of either sudden or long continued duration. Thus the whole mechanism is in such delicate adjustment, that change in any factor could presumably cause imbalance.

RE-EDUCATING THE EMOTIONS

Outlets must satisfy the inmost aspirations of the individual, and carry on his energy in channels appropriate to his needs. It is not enough merely to tell him to "work off" his excess emotion. It must be used creatively after his heart's desire, in some fashion.

Dr. Cannon points the way physiologically, by showing the disrupting effects upon an organism prepared by emotion for violent action, if the physical action be deferred or prevented. He stops at that point. The principle can be carried further, to provide adequate means by which the excited organism can find use for the energy which it is prepared to expend, through interests fitted to its intellectual level.

To warn a patient against giving way to his feelings, without showing him how to bring about this control, is but to increase his strain; just as to beg him when in great bodily fear, "not to be afraid," usually augments his terror.

Re-education of the patient, in the sense of helping him to understand the sources of his emotional stresses in order that he may know how to re-route their component energy, is the most practical therapeutic aid for the emotional problems of tuberculosis. The individual must first be helped to face his difficulties, and to identify the feeling-habits in himself (usually dating back over long periods) which led to his failure; he must be shown how to substitute new feeling-habits, which will lead to better adjustment; how to rely upon himself, and become emotionally grown up; and finally, how to find adequate constructive outlets for his emotional energy. In bed patients, these outlets must necessarily be through mental instead of physical channels.

Optimism that is based on confidence in the recuperative powers that are within the organism, is a different thing from the defense against fear, and is a tremendous asset which therapeusis cannot afford to overlook. If fear be faced, and not run away from by pretending it does not exist, it can be dealt with adequately.

The Role of Emotion in Tuberculosis, Mary B. Eyre, Trans. of the Nat. Tuberc. Assn., 1932.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was held November 9, 1932, at the medical Arts Auditorium.

The first half of the scientific program was given by members of Lord Lister staff. Dr. E. C. Henry made the first presentation, talking on "Pathological Specimens of Kidney Lesions."

Dr. R. L. Traynor talked on "Heart Block" and Dr. Roy Fouts on "Bone Tumors."

The second half of the program was by members of the staff of Immanuel hospital. Dr. J. A. Weinberg talked on "Lobectomy in Bronchitectasis." Dr. H. H. Davis' subject was "A Case of Generalized Osteitis Fibrosa Cystica With Parathyroidectomy" and Dr. A. F. Tyler presented "A New Technic for Electrocoagulation."

The regular meeting of the **Omaha-Douglas County Medical Society** was held November 22, 1932.

Doctor Earl C. Sage presented a case report of a patient suffering from Polyneuronitis, the patient being present.

The first paper on the scientific program was by Dr. B. R. McGrath of Grand Island, who presented "A Complicated Chest Case." His patient was also present.

The second presentation was by Dr. Adolph Sachs, who talked on "Agranulopenia." This talk was illustrated with lantern slides. Discussed by Drs. Niehaus, Heagey, Hamilton and James Kelly. Dr. Ralph Luikart closed the program with a paper on "Avitaminosis as a Likely Etiological Factor in Polyneuronitis Complicating Pregnancy." This was discussed by Drs. Mason, Levine, Ernest Kelley and James Kelley.

The **Madison Six County Medical Society** held the December meeting in the Methodist church basement at Stanton, following a fifty cent chicken dinner served by the ladies of the church. This marked an innovation in medical society dinners—a splendid meal served for a price to suit the times. About thirty-five physicians and wives attended. The following program was carried out:

"An Unusual Experience in Obstetrics," Dr. H. W. Francis, Bancroft.

"Trichinosis—A Report of Four Mild Cases," Dr. John Buis, Pender.

"Re-education of the Voice Following Complete Laryngectomy," with presentation of case with slides, Dr. Philip L. Romonak, Omaha.

"Care of Slight Eye Injuries," Dr. J. H. Judd, Omaha.

The annual election of officers resulted in Dr. F. X. Rudloff, Battle Creek, being elected president; Dr. John H. Calvert, Pierce, vice president, and Dr. R. A. Frary, Stanton, secretary-treasurer (re-elected). The delegates elected last year were re-named.

The **Lincoln County Medical Society** held their regular meeting and luncheon at noon, December 8, in the Pawnee hotel, North Platte. At a business session following the dinner Dr. Townsend E. Dent was elected president for the ensuing year; Dr. Joel Anderson, vice president; Dr. H. H. Walker, secretary and treasurer; Dr. O. R. Platt, delegate to the state meeting. A discussion followed the business session.

The following officers were elected at the meeting of the **Scotts Bluff County Medical Society,** December 8, 1932, for the year 1933: Dr. G. W. Pugsley, president; Dr. F. M. Collins, vice president; Dr. W. J. Gentry, re-elected secretary and treasurer; Dr. G. W. Pugsley, re-elected delegate.

—William Gentry.

The **Burt County Medical Society** at a recent meeting at Lyons re-elected the present officers as follows: Dr. S. A. Swenson, Oakland, president; Dr. J. G. Allen, Craig, vice president; and Dr. H. W. Benson, Oakland, secretary-treasurer.

The **Sixth Councilor District Medical Society** meeting at the McCloud hotel, York, December 19, listened to an address by Dr. L. VanEss, of the college of agriculture, on "Tuberculosis in Its Relation to Public Health," and to Professor A. F. James of the University on "Recent Developments in Hypnotism."

The annual meeting of the **Southwestern Nebraska Medical Society** met in McCook, December 8. After the dinner the following officers were elected for the ensuing year:

President, Dr. W. C. Miller of Arapahoe.

Vice Presidents: Drs. G. A. DeMay, McCook; J. F. Premer, Benkelman; L. B. Brown, Stratton; B. I. Mills, Maywood, and C. E. Minnick, Cambridge.

Secretary-treasurer, Dr. E. F. Leininger, McCook.

The Southwestern Nebraska Dental Society members were guests of the physicians.

The program consisted of talks by members and guests on things pertinent to the profession and were given by Dr. J. G. Colgan, Dr. Leininger and Attorney F. M. Colfer.

CALENDAR AND PROGRAMS, LANCASTER COUNTY MEDICAL SOCIETY

The Lancaster County Medical Society has issued a calendar and program for each meeting of the society for the entire society year of 1932-33.

The idea is an appealing one and speaks well for the foresight of those in authority, since it shows not a hit and miss method of doing, but a definite outline for the year:

JANUARY 3, 1933

"The Management of Acute Intestinal Obstruction," Dr. Thomas G. Orr, Professor of Surgery, University of Kansas School of Medicine.

JANUARY 17, 1933

Clinical-Pathologic Case Report, Dr. George W. Covey.

"Cataract Operations by Different Methods; Indications For, and Advantages of Each," Dr. J. J. Hompes.

"Some Problems in the Care of the Insane and Defectives," Dr. D. G. Griffiths.

FEBRUARY 7, 1933

Clinical Case Reports; "Preliminary Report on Arthritis Work at Lincoln City Clinic," Dr. J. E. M. Thomson, Dr. W. W. Carveth.

FEBRUARY 21, 1933

Clinical-Pathologic Case Report, Dr. Clarence Emerson, Dr. L. C. Knight.

"Diagnosis of Mastoiditis Based on Records of Lincoln Hospitals," Clinical—Dr. F. F. Teal; Laboratory—Dr. J. W. Thomas; Roentgenogram—Dr. Earl B. Brooks.

MARCH 7, 1933

"Tuberculosis of the Upper Respiratory Tract," Dr. Robert Levy, Professor of Otolaryngology, Colorado School of Medicine.

MARCH 21, 1933

Clinical-Pathologic Case Report, Dr. E. R. Ryerson.

"A Clinical and Statistical Study of Prostatic Obstruction," Dr. A. D. Munger.

"Problems of Dental Prosthesis of Interest to Medicine," Dr. B. L. Hooper.

APRIL 4, 1933

Omaha Meeting.

APRIL 18, 1933

Clinical-Pathologic Case Report, Dr. E. W. Hancock.
"Irritable Colon," Dr. J. C. Thompson.
"Carcinoma of the Bowel," Dr. S. O. Reese.

MAY 2, 1933

Clinical-Pathologic Case Report, Dr. W. W. Carveth.
"Carcinoma of the Cervix," Dr. I. C. Munger, Sr.
"Chorio-epithelioma of the Uterus" Dr. Clayton F. Andrews.

HUMAN INTEREST TALES

Dr. A. R. Downing, Merna, spent a month in California, recently.

Dr. M. D. Pass, formerly of Broadwater, has located at Merriman.

Dr. J. H. Morrow, Merna, spent some time recently at Excelsior Springs, Mo.

The marriage of Dr. Herman Kully and Miss Ruth Ziev, Omaha, is announced.

Dr. and Mrs. J. M. McNally, Bellwood, visited in Peoria, over Thanksgiving.

Dr. Edgar Allen of Rochester, Minn., spent Thanksgiving with home folks at Cozad.

Dr. and Mrs. Charles Green, Ladd, Ill., visited the doctor's patients in Omaha last month.

The profession sympathizes with Dr. A. Parsons of Valley, in the death of his wife, recently.

Dr. D. W. Vanderhoof, Scribner, was reported a patient in an Omaha hospital in December.

Dr. and Mrs. F. B. Hollenbeck, Lincoln, visited a son at Merchantsville, N. J., over Thanksgiving.

Dr. and Mrs. A. E. Stewart, Cedar Bluffs, spent Thanksgiving with a daughter at Greeley, Colo.

Dr. G. W. Dishong, Omaha, spoke before the Norfolk Rotary club recently on the inferiority complex.

Dr. H. D. Runty of Gary, Indiana, has located at De Witt in succession to Dr. George Sloss, deceased.

Dr. Ernest Kelley, Omaha, addressed the Barrister's club recently on "Reflections of an Expert Witness."

Dr. J. F. Bowman, Loup City, state senator, went through an alarming siege of pneumonia in December.

An attempt was recently made to burn the Albion hospital by saturating a rug with kerosene and igniting it.

Dr. Melvin W. Binger, of the Mayo clinic, and his family, spent Thanksgiving with relatives at Dorchester.

Dr. J. G. Marron, Brainard, visited his son at the Wentworth Military Academy, Lexington, Mo., in November.

Dr. Paul Royal and family, Lincoln, spent the Thanksgiving period visiting his parental home in Des Moines.

Dr. G. E. Charlton, superintendent of the Ingleside State hospital, underwent an operation for removal of gallstones in December.

Dr. and Mrs. E. H. Worthman, Louisville, spent a few days in Minneapolis, Minn., visiting a dietician-daughter at Fairview hospital.

Dr. A. B. Adams, until recently in practice at Florence, has gone to southern California for the winter in hopes of benefiting his health

Two medicine cases stolen with the car of Dr. C. W. Way, Wahoo, in September, were found by some boys while hunting near Elkhorn.

Dr. and Mrs. G. A. Heath, Fairbury, spent a short time with their daughter and family at Trinidad, Colorado, the first part of December.

Dr. W. M. Binger and wife, Rochester, Minn., visited in Beatrice over Thanksgiving, and the doctor spoke before the local medical society.

Dr. and Mrs. B. F. Richards, Crawford, spent Thanksgiving at Fort Warren, Wyo., visiting their daughter and husband, an army officer.

Dr. C. D. Barnes, Tecumseh, suffered severe and alarming injuries, the result of being crushed when a car backed into him, crowding him against his own car.

Dr. E. L. MacQuiddy, Omaha, gave an illustrated lecture on "Surgical Instruments of Antiquity," at Morrill hall, University of Nebraska, on a recent Sunday afternoon.

The Good Samaritan society has taken over the management of the Columbus hospital. The same organization recently took over the former Fowler mansion in Fremont and opened it as a home for the aged.

The marriage of Dr. E. C. Kieck, Cedar Rapids, Ia., and Miss Johanna Dickson of Belle Plaine, Iowa, is announced. Dr. Kieck's boyhood home was Springfield, Nebr., where his parents now live, and he graduated from Creighton Medical College.

A law-medic debate at Creighton University on the question, "Resolved, that the greater ethical dangers of the medical profession demand a stronger character than is required for the practice of law," resulted in a draw when the judges failed to arrive at a decision. This was due to the equal merits of the teams, according to the judges.

The appointment of Dr. Rachel Long of Holdrege as Nebraska chairman of community service and unit activities of the American Legion auxiliary was recently announced by Mrs. Olga Webb, state president. The distinction was conferred on Dr. Long, past president of the local auxiliary, as a result of her unceasing activity, which helped the Holdrege unit to win the national cup.

BOOKS RECEIVED

INFANTS AND CHILDREN, Their Feeding and Growth, by Frederic H. Bartlett, M. D., Director of the Department of Pediatrics, Fifth Avenue Hospital, New York City. 409 pages, octavo, paper cover. Published by Farrar & Rinehart, Inc., on Murray Hill, New York. 424 pages, complete index, to be published in January, 1933, at $1.50 net.

FINAL REPORT ON THE COMMISSION ON MEDICAL EDUCATION. 12 mo., 560 pages. Published by the Office of the Director of Study, 630 West 168th St., New York City, 1932.

RADIOLOGIC MAXIMS, by Harold Swanberg, B. Sc., M. D., F. A. C. P., Editor of The Radiological Review, Quincy, Illinois. With a foreword by Henry Schmitz, A. M., M. D., LL. D., F. A. C. S., Professor of Gynecology and Head of the Department, Loyola University School of Medicine Cloth. Price, $1.50; pages, 126. Quincy, Illinois: Radiological Review Publishing Company, 1932.

RESULTS OF TREATMENT OF THROMBO-ANGIITIS OBLITERANS BY FOREIGN PROTEIN

From a study of the effects of foreign protein therapy in 150 cases of thrombo-angiitis obliterans, Nelson W. Barker, Rochester, Minn. (*Journal A. M. A.*, Sept. 19, 1931), concludes that this form of treatment is chiefly valuable to carry a patient through one of the critical periods of exacerbation, provided gangrene has not already become too extensive. Once he has been carried through such a period, other measures should be substituted. These include education regarding the disease; protection of the extremities from mechanical, thermal and chemical injury; special hygiene, particularly of the feet; limitation of activity; abstinence from tobacco; postural exercises; contrast baths, and sympathetic ganglionectomy in selected cases. In certain cases in which ulcers or limited gangrene are present, and in which healing is well established following treatment by foreign protein, sympathetic ganglionectomy will markedly accelerate the process of healing. Treatment by foreign protein is rational for thrombo-angiitis obliterans. It tends to relieve pain and give increased blood supply to the extremities, thus accelerating the healing of open lesions. It has relatively little effect in cases in which there is claudication only or in cases in which there is extensive gangrene. The best results are secured in cases in which there is rest pain, with or without ulcers or limited gangrene.

PRESENT STATUS OF ANESTHESIA PROBLEM

Arthur Dean Bevan, Chicago (*Journal A. M. A.*, Nov. 21. 1931), reviews briefly the subject of anesthesia, tests the various anesthetic agents by the scheme of measurement which his associates and he have devised, and attempts in a judicial way to determine what anesthetics are today the safest, most efficient and most practical for use in a general surgical clinic. He believes that the use of chloroform, of intraspinal anesthesia, of intravenous anesthesia, of intrarectal anesthesia, of intratracheal anesthesia and of the so-called basic anesthetics, such as scopolamine, avertin and amytal must be limited to very narrow fields. Fortunately, local anesthesia, gas anesthesia and ether afford three anesthetic measures which, if handled by an expert can be used alone or in sequence, with abolition of pain and, if desired, the abolition of consciousness and, when required, complete relaxation, and can secure complete and safe anesthesia for any and all surgical operations. This places anesthesia on a very unpretentious, simple bases. but here, as in all fields of surgery, it finally becomes apparent that simplicity is near truth. The author believes that the general adoption of this simple scheme of anesthesia will prevent many anesthetic accidents and save many lives.

Patient: "Doctor, I want you to give me some advice, if you can. I've got the girl habit."

Doctor: "You mean you're a woman chaser?"

Patient: "No, I mean I'm the father of six girls and I want a boy."

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PROSTATECTOMY AND TRANSURETHRAL PROSTATIC RESECTION COMPARED*

Based Upon Personal Experience and Summarized Opinions

EDWIN DAVIS, M. D., and C. A. OWENS, M. D.,**

Omaha, Nebraska

> "Be not the first by whom the new is tried,
> Nor yet the last to lay the old aside."
>
> —Pope.

Urological surgery, which has long been one of the most (if not the most) exact of the surgical specialties, has recently received new impetus through the addition of two new and valuable procedures—intravenous pyelography and transurethral prostatic resection. Each of these methods has its recognized and unquestioned merits. Yet, each has its very definite limitations and its dangers. It is well known that in all fields of endeavor the pendulum tends to swing too far. In our over-enthusiasm, we are inclined to overlook the complications and pitfalls. In order properly to evaluate any given new surgical procedure, it is necessary that we use as a basis an accurate comparison of the complications, the mortality rates and the immediate and ultimate functional results of the new and the old methods.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May, 24-26, 1932.

**From the University of Nebraska College of Medicine.

An example of excess swings of the pendulum in both directions, due to over-enthusiasm (later corrected by over-caution) is afforded by the history of the changes in the attitude of the profession toward nephropexy. During the decade between 1919 and 1920, nephropexy was a fashionable procedure. Kidneys were suspended upon the slightest provocation. A palpable kidney, with a pelvic capacity in excess of several cc. was considered to be sufficient operative indication. Then the correction set in. Gradually the harmfulness of this procedure, and its futility unless properly indicated, were recognized. Whereas, the time was when one group of extremists claimed that all floating kidneys should be suspended, the time came when another group of extremists claimed that none should be suspended. Obviously, neither of these views is correct. There is a middle road for the conservative to follow. As the years have passed, the operation of nephropexy has come to be properly evaluated. Those who are open-minded recognize that there is a well defined group of cases, with hydronephrosis, ureteral obstruction and colic secondary to nephroptosis, in which nephropexy is an exceedingly valuable procedure, offering complete and permanent sypmtomatic relief. And so it is with all new procedures. Time, and impartial analysis of results, will render the verdict.

DEFINITION

Transurethral prostatic resection may be described as the removal, bit by bit, by means of an electric cutting current, through an endoscopic tube (during one or more sittings) of a sufficient amount of the obstructing prostatic tissue to permit the patient to empty the bladder. Very complicated and elaborate electric equipment is required, in order to provide both a cutting current to remove the tissue and a coagulating current to control the hemorrhage. The mechanism of the modified endoscope (or "resectoscope") employed for this purpose, provides a small wire loop 7 mm. in diameter, which, through a system of lever control, makes an excursion of 27 mm. in length, cutting out a piece of prostatic tissue of approximately corresponding size. A large number of cuts may be made at one sitting, permitting the removal of 5 to 10 grams of prostatic tissue, or considerably more. As is necessary, the coagulating current is switched on to control individual bleeding points. Through a gradual process of evolution, this instrument has reached a stage approaching mechanical perfection, so that in skillful hands there is no limit to the number of grams of tissue which may be removed. Furthermore, the excellent vision afforded through the more modern lens systems permits this tissue to be removed with great exactness, and, together with the coagulation current, permits the control of immediate hemorrhage in a thoroughly satisfactory manner.

A detailed description of the development or evolution of this mechanical equipment would be here out of place. A number of pioneers have contributed. Suffice it to state that the recent wide recognition of prostatic resection has been due largely to the mechanical ingenuity and enthusiastic publications of T. M. Davis(1). The McCarthy(2) equipment functions upon somewhat similar principles. Caulk(3), with his cautery punch, modified from Young's prostatic bar excisor, has been obtaining excellent results for a number of years. The method advocated and successfully employed by Bumpus(4), makes use of the cold punch (or circular cutting knife) principle, preceded by electric coagulation of the tissue to be excised, in order to provide hemostasis. Of these three general methods (the electric cutting loop, the cautery punch and the cold punch, preceded by coagulation) none is foolproof, and each requires a great deal of skill as well as familiarity with instrumental procedures in the prostatic urethra. In fact, no one has been able to duplicate, or even approach, the results which have unquestionably been attained by both Caulk and Bumpus, each with his own special method.

This paper is written in an attempt to give a fair and impartial answer (insofar as our limited knowledge permits) to the question which is daily asked. "What do you think of prostatic resection?" An answer to this question must necessarily include a summary of the opinions of others.

PERSONAL EXPERIENCE WITH PROSTATIC RESECTION

We have employed the transurethral prostatic resection method in a limited number of selected cases during recent months. Results in general have been satisfactory, and in a few cases, highly gratifying. We have confined our efforts in this field particularly to fibrous contractures of the vesical orifice, median prostatic bars, moderately hypertrophied median prostatic lobes, and to prostatic carcinoma. It is not too early to state that in cases of prostatic carcinoma particularly, transurethral resection seems to offer to the sufferer a method of relief hitherto not available. Whereas it is true that partial enucleation by the perineal route, in cases of advanced carcinoma of the prostate, may give gratifying and fairly prolonged satisfactory functional results, these patients (with prostatic malignancy) are peculiarly susceptible to post-operative fistula and unsatisfactory urinary control. Transurethral resection in these cases, however, provides a method for the removal of the obstructing tissue. Granting that this relief is only palliative, and perhaps only temporary, the value of this procedure (in cases of prostatic malignancy) is nevertheless not open to question.

We are not as yet prepared to express an opinion as to the advisability of the resection method in cases of large hypertrophy.

THE ADVANTAGES OF PROSTATIC RESECTION

The enthusiastic advocates of resection claim as its chief advantage the decreased period of hospitalization, with consequent saving of time and expense. While the economic consideration is an important one (particularly today), there are obvious reasons why this consideration should not be paramount. A few days, or a few weeks, more or less in the hospital is not long as compared to eternity. By this we do not intend to imply that there are established facts indicating that either one or the other of these procedures is more hazardous. We believe, however, that it is hardly necessary to state that the economic factor is of secondary importance, as compared either with immediate risk or ultimate result. Furthermore, such saving of hospitalization as there is applies only to post-operative convalescence, since preliminary bladder drainage in these cases is just as essential as preceding prostatectomy. Alcock(5) states, "these patients—were prepared as though they were to have prostatectomy."

In all fairness, however, those opposed to resection must acknowledge that the economic and time factors, although not paramount, are exceedingly important, both from the viewpoint of the patient, and from that of the charity hospital. To say nothing of the daily cost to the institution of each charity bed, the mere item covering the expense of surgical dressings used to take care of the urinary drainage runs into an amazing figure.

Another obvious advantage of the resection route is that the idea naturally appeals to the patient. From his viewpoint, prostatic resection is not a major procedure. Although the patient's opinion in this respect is fallacious, herein lies a distinct advantage, in that the borderline case, or the patient who is facing gradually increasing urinary obstruction, and who is reluctant to consent to prostatectomy, may be more easly persuaded to submit to the "non-operative" method of relief before a critical or dangerous stage has been reached.

Kretschmer(6) cites "the elimination of shock" as an advantage of the transurethral route. The same applies to perineal prostatectomy under sacral block anesthesia. We have long since forgotten the word "shock" in this connection.

RESULTS IN PROSTATECTOMY

It is obvious that an accurate opinion concerning the relative merits of the two procedures, can have no sound basis other than a comparison of results. With this purpose we therefore submit a brief summary of results in prostatectomy in a series sufficiently large to permit reliable conclusions. This series, which has been previously reported from time to time by one of us (Davis(7)) now totals 479 consecutive cases of perineal prostatectomy under sacral block anesthesia. Table I shows 12 deaths, or a 2.5% mortality rate, with 98.8% of these patients classifying themselves, upon questionnaire blanks, as well or improved. Whether or not we shall be able to duplicate or better this record by any other method, can be determined only by the lapse of a considerable period of time. We propose to find out. It is our purpose gradually to give the transurethral method a thorough trial, but we do not propose immediately and completely to abandon prostatectomy in favor of wholesale and indiscriminate employment of transurethral resection in all cases of prostatic obstruction.

THE MORTALITY RATE OF PROSTATIC RESECTION

The relative mortality rates of the two procedures is undetermined, and doubtless will remain so for a period of years. It is also true that these figures inevitably will vary widely in the hands of different operators, and that the bulk of the poorer records never will be reported. The same applies to ultimate functional results as well as to the immediate mortality rates, and to prostatectomy as well as to the transurethral method. With the sincere purpose of speeding up the answer to these moot questions, Alcock(5) has adopted the transurethral resection method almost as a routine, and has recently reported results in a series of 175 cases, thus rendering an exceedingly valuable service.

One must not overlook the fact that prostatic resection, although requiring no external incision, is nevertheless a *major surgical procedure,* leaving an open sloughing surface with consequent possibilities of grave complications, due to sepsis, and to both immediate and secondary hemorrhage. Furthermore, the average prostatic resection is far more time-consuming, and is a far more trying and tedious procedure, from the viewpoint of both patient and surgeon, than the average prostatectomy under sacral block anesthesia. Referring to his first 50 resections, Alcock states, "Practically all of these patients showed post-operative reactions, and in over 60% of them the reactions were quite violent, as manifested by chills and temperature from 101° to 104° lasting from two to five days. Many of these patients were extremely sick." He adds, however, that later in the series, since he has acquired more skill and familiarity with the procedure, these reactions have become less conspicuous. With respect to mortality, Alcock has reported 20 deaths in his series of 175 which is equivalent to 11.3%. However, in reporting his deaths, Alcock has been so scrupulously honest and upright as perhaps to "lean backwards" a trifle. For instance, he has included not only *all* patients dying from *any* cause following prostatic resection, but also two patients dying during the preliminary preparation *preceding* prostatic resection. For this reason, these mortality figures may perhaps be somewhat unfair to prostatic resection. Alcock has classified his mortality as follows:

Deaths due to subsequent operations following resection failure	3
Deaths due to vascular accidents (such as coronary occlusion) following resection	3
Deaths due to other causes not related to the resection	3
Deaths following resection due to errors in technique and preparation	4
Deaths directly due to resection (sepsis and uremia)	5
Deaths occurring during preliminary drainage	2
Total	20 (11.3%)

It is but fair to add that Alcock has noted a distinct decrease in his mortality as his skill and familiarity with the method have increased, as shown by the following:

	Deaths	Mortality Rate
1st 25 cases	7	28%
2nd 25 cases	5	20%
3rd 25 cases	2	8%
4th 25 cases	1	4%
5th 25 cases	1	4%
6th 25 cases	1	4%
Last 100 cases	5	5%

It is quite evident, therefore, that transurethral resection is a major surgical procedure which is far from free from risk. It is also obvious, however, that in skillful hands, the mortality rate of resection may be made to compare favorably with the better prostatectomy statistics. Alcock's decreasing mortality rate affords convincing proof of the dangers inherent in this method in unskilled hands.

FUNCTIONAL RESULTS OF PROSTATIC RESECTION

The final important subject for consideration has to do with functional results, both immediate and ultimate. It may be said that there seems to be no question that in general the immediate functional results of prostatic resection are satisfactory. It is true, however, that during the first two or three post-operative weeks, while the slough is separating and coming away, the patient is likely to pass through rather a trying and tedious period with symptoms corresponding to those of acute cystitis, and with varying degrees of residual urine. Alexander Randall(8) has described this phase as follows:

"As regards resection; I find it dropping back into the position where the punch operation was previously used, with a little broader scope and probably with better ultimate results in cases of early commissural hypertrophy. We have had our complications, primary among which is the slow "urethral convalescence," and sometimes I wish I had done a prostatectomy, rather than cheer these fellows along the slow and tedious post-operative period, when signs and symptoms are disappointing to both patient and surgeon."

For obvious reasons, the question as to the ultimate functional results is not to be disposed of at the present writing. The procedure is too new. Referring to the value and to the future of prostatic resection, we quote in brief the following opinions:

Dr. Hugh H. Young(9), Baltimore, Md.: "Any method that is to supplant perineal prostatectomy should be safer than perineal prostatectomy, and just as permanently curative.—The questions which time alone can answer are: What will be the ultimate results? How many will come to other operations later? How many will eventually require prostatectomy? What will be the actual mortality, including the four to six weeks after the operation during which the slough is separating?"

Dr. Hugh H. Young(10), Baltimore, Md.: "The reason that these modifications of the punch have had such a popularity recently, is because of the fearful mortality which many have had in their cases of prostatectomy. Those of us who do the perineal operation have had no such urge to quit prostatectomy. —If, therefore, it is possible, by means of the perineal route, to enucleate all the adenomatous enlargement with a very low mortality, why should we adopt for such cases an operation which is manifestly incomplete, partial, liable to recur, and which, in the hands of many, has already shown much higher mortality than perineal prostatectomy?—From all sides, we hear of deaths following prostatic resection which is now being used by men who are not urological surgeons and therefore delighted to find an office operation by which they may treat prostatic hypertrophy."

Dr. N. G. Alcock(5), Iowa City, Iowa: "So far as immediate results are concerned, I am perfectly satisfied with the method. Whether I continue to use it or not will depend upon what the ultimate outcome is, and that will be determined only by a very careful study of what has happened to these patients a year or two years after they are resected."

Dr. Arthur B. Cecil(11), Los Angeles, Calif.: "Whether prostatic resection will have any great advantage over prostatectomy, I really do not know. I am doubtful as to whether the death rate will be as low in the hands of anyone, and I am most doubtful as to whether the results will be as good."

Dr. J. R. Caulk(3), St. Louis, Mo.: "Transurethral surgery is sure to have a more prominent place as time goes on, but care must be taken in its execution. It is a delicate task and entails considerable training, confidence in one's self and the adoption of every possible measure to insure safety through careful preliminary preparation, accurate surgical manipulations, and scrupulous after-care."

Dr. Herman C. Bumpus(12), Rochester, Minn.: "This study of 102 cases in which prostatic tissue was removed through the urethra five years ago because of urinary obstruction, would indicate that transurethral resection should, with the improvement in technique which has occurred in the last five years, be performed with less risk, less time spent in the hospital, and consequently with less expenditure of funds, with a final functional result equal in permanence to that usually obtained by prostatectomy."

Dr. Clyde W. Collings(13), New York City, N. Y.: "Small and moderate-sized prostatic obstructions may be efficiently relieved under direct vision by the high tension cutting current through the cysto-urethroscope. Because of instrumental difficulty and prolonged cystoscopic manipulation, marked enlargement had best be relieved by prostatectomy."

Dr. Wm. F. Braasch(14), Rochester, Minn.: "Transurethral resection has come to stay. Whether it will entirely replace surgical prostatectomy remains to be seen. In the presence of large median and bilateral lobes, prostatectomy may be indicated. The last point I would emphasize is that transurethral surgery should be employed only by those who have had widespread experience in its use and not by near-urologists. It will never be a fool-proof procedure."

Dr. Herman L. Kretschmer(6), Chicago, Ill.: "Regarding the use of the instrument in very large prostates, I feel that very large prostates had better be removed surgically."

Dr. Herman L. Kretschmer(15), Chicago, Ill.: "This matter will not be settled until after an interval of about ten years."

Dr. Frank M. Phifer(16), Chicago, Ill.: "I remain an enthusiast on perineal surgery, and I am reluctant to make a change from a procedure that has given me such satisfactory results over a long period of time."

It is to be noted that the above opinions are far from unanimous; in fact, in some respects, these opinions represent divergent views, yet each of these observers is able and honest and of established reputation. Considering the newness of the procedure under discussion, however, and the revolutionary character of suggested change in surgical technique, it would be strange indeed were there other than marked discrepancy in opinion.

It is also to be noted that these opinions have certain trends in common. Whereas, these observers show wide variations in their enthusiasm for prostatic resection, each concedes a place to this procedure, each is inclined to be conservative in his judgment as to ultimate results, each shows a tendency to reserve the larger prostates for surgery, and each sounds a note of warning against the adoption of prostatic resection by the novice or the "near-urologist". The consensus of opinion would, therefore, seem to be that an interval of time will be necessary before the pendulum swings to its proper resting place.

COMMERCIALISM IN THE SURGICAL INSTRUMENT TRADE

A word concerning commercialism in the surgical instrument trade, as well as in the drug trade, is not here out of place. It is only too apparent, in a situation such as this, in which there is pending a country-wide adoption of a new procedure, that commercialism plays a major role. These electro-surgical units are expensive. The sum total of profitable business involved in equipping the urological profession with these machines is tremendous. The prospective prostatic resectionist is bombarded by high-pressure sales literature, and besieged by clever salesmen, who have memorized a glib patter about the transurethral approach, such as to leave him (the surgeon) wondering whether there has been something lacking in his (the surgeon's) training. Cecil, in Los Angeles. writes, "I have been bewildered by the various instruments." The inevitable result of this commercial force will be the placing of large numbers of these electro-surgical units (some of them excellent, some of them not so excellent) over the country, in hands, some of which are skillful and scrupulous, and some of which are not so skillful and not so scrupulous. It is only natural that the primary interest of the surgical instrument trade should be in sales volume, rather than in the qualities of a given electro-surgical unit, or in ultimate clinical results. Furthermore, there is an urge to peddle these instruments "right now", while the enthusiasm is at its height.

CONCLUSIONS

Transurethral prostatic resection, properly employed and in selected cases, is undoubtedly a useful and valuable procedure.

Majority opinion indicates that this procedure will partially replace, but will not supplant, prostatectomy.

What type and what percentage of obstructing prostates may be best removed by resection, and what type and percentage by prostatectomy, remains for the future to determine. These questions may be answered only by a fair and impartial analysis of end results.

The immediate results of prostatic resection, in selected cases, seem to be satisfactory. The ultimate results of prostatic resection may be determined by the lapse of time only.

The chief advantage offered to the patient by the transurethral method is a decreased period of hospitalization. Preliminary drainage, preceding resection, however, is just as essential as before prostatectomy.

It seems doubtful whether, in the last analysis, the transurethral method, considering mortality rate, immediate functional results, and ultimate functional results, offers the patient as great a degree of assurance of continued health and comfort as does perineal prostatectomy.

It is likely that the personal equation will come to be an important factor in answering these questions. Each must compare his own results. Whereas, in the hands of one individual, prostatectomy may give better results, in the hands of another, the opposite may be true.

TABLE I

RESULTS IN PERINEAL PROSTATECTOMY

Total consecutive cases	479
Average age	70
Deaths	12
Mortality rate	2.5%
Late Functional Results —	
Well	82.3%
Improved	16.5%
Unimproved	1.2%
Incontinence—	
Complete	0
Moderate but definite	4
Slight or doubtful	5
Perineal urinary fistula—	
Requiring secondary closure	7

The classification of late functional results as to well, improved, or unimproved as shown in the above table, is based upon the patient's own voluntary opinion as expressed upon questionnaire blanks sent out at an interval of not less than four months following the operation.

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DISCUSSIONS

A. D. MUNGER, M. D. (Lincoln): Dr. Davis has recounted to you the well-nigh perfect plane upon which prostatic surgery rests at the present time. Such statistics as he presents are a credit to any special branch in any field of medicine. The urologists may well be proud of the plane upon which prostatic surgery rests at the present time. I hold no brief and offer no controversy for the perineal over the suprapubic route. Each method of procedure, in the hands of a man well trained, carries relatively the same low mortality, providing other hazards are limited.

I feel Dr. Davis has, in brief, put before this audience a new hazard which should be thought about. That hazard is trans-urethral resection of the prostate.

It is not an unusual thing for the medical profession to be overcome with the enthusiasm engendered by some of the leaders of the profession in any special field of work, especially with respect to new procedures. The truth of this is recognized by certain instrument and electrical apparatus manufacturers. They recognize our gullibility as an easy thing to prey upon and capitalize this enthusiasm as it spreads through the profession to the point of actual damage and discredit to any special field of work. This has been especially true in urology recently due to the overly enthusiastic leaders in this field, and like hundreds of others, I have had more than a usual interest in this procedure because of these reports. My desire has been great to do this work. It appeared that a virtual utopia had been reached in the relief of prostatic obstruction, yet always there has been that something in the background which causes one to say, "Wait until statistics are forthcoming." Unfortunately, the enthusiasts are usually lacking in statistics.

I reviewed in this town before some of the hospital staffs, the writings coming from some of these enthusiasts declaring that this should be a wonderful procedure. I am not now discounting the possibilities and probabilities before us in this new method, but after investigating it from the immediate statistical standpoint, I have begun to feel probably the enthusiasts were not coming clean. Their cards were not on the table. I am perfectly willing to declare myself now as an ultraconservative in this procedure until we know more about it from the mortality and morbidity standpoint.

I have here an unofficial report which should make one stop and think twice. It carries with it an inordinately high mortality, from a number of the larger clinics in this country where this work is being extensively done, due to some of those very hazards Dr. Davis presented, i. e. hemorrhage, which in the normal procedure of prostatectomy can be eliminated.

E. E. ANGLE, M. D., (Lincoln): I want to add one word. Much has been said about the trans-urethral approach. We are going to watch that with a great deal of care, and are going to use it in a controlled way. We are not going to give up our old way for the new until we are sure the new will deliver the work.

Prostatectomy is now being done with a mortality that is just as low as the mortality for appendectomy. You have these old gentlemen who will die because they have enlarged prostate and residual urine of over two ounces, and are afraid to have an operation. I want to urge you in talking to such patients to try to convince them that the thing they should fear is to go on with that obstruction. The operation means only a short stay in the hospital. I know doctors who would have their prostates resected who have refused to have them removed surgically. At the present time, prostatectomy is still safer than any other procedure, and it is ten times safer than allowing the large gland to remain.

EDWIN DAVIS, M. D., (closing): Dr. Munger has brought up the subject of commercialism. I have a grievance against the drug trade and the surgical instrument makers for introducing commercialism into our work, and telling us more than we know about the use of various drugs and instruments. It is these instrument makers who are concerned about distributing high-priced instruments.

THE BLOOD SEDIMENTATION TEST IN THE DIFFERENTIAL DIAGNOSIS OF LOWER RIGHT QUADRANT DISEASE

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If whole blood to which some anticoagulant, such as sodium citrate, has been added is allowed to stand in a test tube, the erythrocytes (and leukocytes) will gradually settle, leaving a clear plasma above. That there is a marked variation in the settling time of blood in health and in inflammatory conditions has been noted by many observers. Galen spoke of the erythrocytes as forming a buffy coat or "crusta phlogista." In 1791, John Hunter noted that the erythrocytes of blood settled more quickly in inflammatory conditions than in normal blood, and that the red cells of normal blood, separated from their own plasma and transferred to the plasma of infected blood, settled with greater speed, the rate being in direct relation to the severity of the infection. This observation became the stimulus for numerous investigations and reports both in this country and abroad (Muller, 1844; Davy, 1839; Nasse, 1836, and others). Then, as often happens in medicine, interest in this phenomenon lagged for half a century, only to be awakened again in 1917, when Fahraeus accidentally noticed the rapidity of the sedimentation of red corpuscles in the citrated blood of gravid women. Later, he, as well as Linzenmeier (1920-1922), found the rapidity of sedimentation even more increased in patients with infections, Linzenmeier giving particular attention to pyosalpinx.

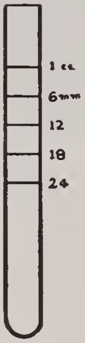
Friedlaender (1924), Polak (1926) and Baer and Reis (1926) have given an excellent review of the literature and have demonstrated the great value of the test in obstetric and gynecologic cases. Wehrbein (1928) has shown its value in urology. It is my purpose to attempt to evaluate the test in general surgery, with special reference to disease in the lower right quadrant of the abdomen. During the past several years, sedimentation tests have been made on most of the patients admitted to the surgical wards of the University hospital. Complete blood counts including Schilling counts were made at the same time for comparison. When Schilling determinations were not made, ordinary differential counts and counts of polymorphonuclear leukocytes, as shown in the segmented cell column of the tables, were substituted.

METHOD

The technic employed in this study was that of Linzenmeier (1922), as modified by Friedlaender (1924). Eight-tenths cubic centimeter of blood was drawn directly from a vein with a Luer syringe containing 0.2 cc. of a freshly prepared 5 per cent solution of sodium citrate. The blood and citrate solution was shaken in the syringe until thoroughly mixed and then emptied into a sedimentation tube (Fig. 1.). This tube is simply a hard glass tube about 6.5 cm. in length and 5 mm. in diameter which has been marked at the 1 cc. level and at 6, 12, 18 and 24 mm. below this level. The time was noted when the mixture was placed in the tube and likewise when the line of demarcation between the erythrocytes and plasma reached the 6, 12, 18 and 24 mm. marks, respectively. In order to have a direct comparison with most previously reported results, the time required for the demarcation line to reach the 18 mm. mark was used in this report, although additional information may be gained by plotting a curve of the entire settling time (Cutler, 1926; Kilduffe, 1929). Such a curve usually shows a relatively slow settling from 0 to

6 mm. (probably due to surface tension), a more rapid fall from 6 to 12 and from 12 to 18 mm., and again a slower time from 18 to 24 mm. (probably due to packing of cells).

Normal Sedimentation Time—Before a test may be of value in disease, a normal for that test must be established. In more than 300 cases of healthy persons, Friedlaender found the sedimentation time (18 mm. line) to be from 1,000 to 1,200 minutes in the male and from 600 to 1,000 minutes in the female. The values given by Linzenmeier are somewhat higher. On the other hand, others report lower figures, some regarding readings over 200 minutes as normal. In healthy persons our average is 720 minutes, varying between 300 and 1,450 minutes. It must be remembered that in an apparently healthy person some form of infection may be hiding which may accelerate the sedimentation time. In spite of this apparent discrepancy in supposedly normal persons, there is such a marked acceleration in certain conditions of disease that it is not as difficult to draw the line between normal and abnormal as it may seem at first. For purposes of this study. any time under 200 minutes may be considered as having diagnostic and prognostic significance.



SEDIMENTATION RATES IN VARIOUS CONDITIONS

Inflammatory Pelvic Diseases—Table 1 shows the sedimentation time, total leukocyte count and differential (Schilling) count in a representative group of acute, subacute and chronic inflammatory pelvic conditions. Practically all cases of acute salpingitis, tubo-ovarian abscesses and cul-de-sac abscesses showed a sedimentation time of less than 30 minutes. In the subacute cases of the same nature, the sedimentation rates were approximately between 30 and 60 minutes, and in the chronic cases, between 60 and 120 minutes. The leukocyte count and the differential count for the most part were consistent with the sedimentation time. However, there were some glaring discrepancies. For instance, in a subacute case of salpingitis (proved by operation), there were a sedimentation time of 34 minutes and total leukocyte count of 7,300; in a case of septic abortion, a sedimentation time of 15 minutes and a leukocyte count of 8,300, and in a chronic case of salpingitis (operative), a sedimentation time of 126 minutes and leukocyte count of 13,200. In some cases, the differential count (Schilling) fitted in with the sedimentation time better than the total white count (for example, a sedimentation rate of 34 minutes, a leukocyte count of 7,300 and Schilling determination; segmented cells, 44; staff cells, 30; young cells, 4; lymphocytes, 16; monocytes. 4, and eosinophils, 2), but in others it was also at variance (for example, a sedimentation rate of 36 minutes, a leukocyte count of 7,600 and Schilling determinations: segmented cells, 60; staff cells, 5; young cells, 0; lymphocytes, 32, and monocytes, 3). With due consideration of possible errors in technic and judgment, particularly as regards the Schilling count, there is still a group of cases in which a marked discrepancy exists between the sedimentation time and the blood picture. From a diagnostic and prognostic standpoint, the sedimentation test is a valuable adjunct to the total white and differential blood counts. often exceeding them in importance. In the differential diagnosis between appendicitis and right-sided adnexal disease, it is of particular value, as will be shown later. Friedlaender, Polak and Maer and Reis used the test in determining the safe time for operation in inflammatory pelvic disease. Baer and Reis arbitrarily took 60 minutes as the deadline under which operation was not safe. In our experience, the patients with a sedimentation time under 60 minutes who were operated on had a stormier convalescence than those who were not operated on until the settling rate was over 60 minutes. However, operations in cases with sedimentation rates as rapid as 30 minutes were safe, although there were a few days of severe reaction. In our series, cases in which the settling time was under 30 minutes were considered inoperable at this stage.

Noninflammatory Pelvic Conditions—Patients with simple ovarian cysts, perineal lacerations, displacements and uncomplicated fibroids showed normal sedimentation time unless there were other foci of infection (table 2). On the other hand, in cases of infected fibroids or fibroids associated with adnexal disease the sedimentation time was rapid. In uncomplicated ectopic pregnancy, there was a moderately accelerated sedimentation (45 minutes), but when associated with salpingitis a much more rapid time (26 minutes) was noted.

TABLE 1.—INFLAMMATORY PELVIC DISEASES

Case	Sedimentation Time	White Blood Cells	Segmented Cells	Staff Cells	Young Cells	Lymphocytes	Monocytes	Eosinophils	Basophils	Diagnosis
M. M.	20	17,950	71	....	....	23	....	5	1	Acute and subacute salpingitis
	17	12,600	58	15	5	17	3	2	....	
	37	6,600	60	....	....	30	3	7	....	
M. S.	20¼	12,500	53	15	3	24	3	2	....	Pelvic abscess
O. B.	12	26,400	92	....	....	8	....	....	....	Acute salpingitis
A. P.	20	17,400	37	49	4	5	5	....	....	Acute salpingitis
R. G.	13	13,600	38	32	....	23	3	4	....	Acute salpingitis
E. W.	35	32,600	78	12	....	6	4	....	....	Acute and subacute salpingitis
	25	20,200	57	16	8	16	1	1	1	
	17	19,100	77	....	....	23	....	....	....	
	42	16,000	44	7	2	35	8	3	1	
	72	13,800	56	15	....	27	1	1	....	
M. B.	20	26,400	92	....	....	8	....	....	....	Acute salpingitis
M. S.	15	22,000	74	....	....	20	2	4	....	Acute salpingitis
	26	9,300	53	4	4	33	5	....	1	
M. K.	15	8,300	54	17	....	27	2	....	....	Septic abortion
L. K.	26	18,700	56	26	....	13	5	....	....	Tubo-ovarian abscess
M. T.	21	10,800	74	10	2	13	1	....	....	Acute salpingitis
M. S.	12	27,900	72	19	2	3	4	....	....	Tubo-ovarian abscess
S. T.	9	10,000	51	7	....	35	6	1	....	Acute salpingitis
M. F.	18	22,800	59	26	1	13	1	....	....	Pelvis abscess
M. O.	23	16,200	54	32	....	10	4	....	....	Acute salpingitis
M. W.	19	18,200	37	37	1	21	2	2	....	Pelvic peritonitis
M. H.	28	13,500	63	5	1	23	5	1	2	Acute salpingitis
M. S.	17	16,000	70	16	2	9	2	1	....	Bilateral pyosalpinx
M. W.	31	18,500	55	32	4	8	1	....	....	Septic abortion
M. B.	26	18,200	82	....	....	18	....	....	....	Acute salpingitis
M. R.	30	16,000	55	22	3	15	3	1	1	Acute salpingitis
M. W.	27	15,000	84	....	....	16	....	....	....	Pyosalpinx
M. W. H.	15	13,000	80	....	....	20	....	....	....	Pelvic abscess
M. K.	13	15,050	86	....	....	14	....	....	....	Acute salpingitis
V. R.	15	12,000	66	6	2	19	1	5	1	Acute salpingitis
M. J.	16	14,000	50	25	2	18	3	1	1	Acute salpingitis
M. B.	20	11,750	47	28	6	19	....	....	....	Septic abortion
M. M.	10	10,500	64	4	7	23	2	....	....	Tubo-ovarian abscess
M. S.	25	15,200	82	....	....	17	1	....	....	Septic abortion
M. Q.	14	16,500	25	35	29	10	....	1	....	Puerperal sepsis
M. B.	58	10,600	70	1	1	20	5	2	1	Subacute salpingitis
M. E.	36	7,600	60	5	....	32	3	....	....	Subacute salpingitis
M. S.	59	10,500	75	....	....	25	....	....	....	Subacute salpingitis
M. H.	33	7,600	78	....	....	16	6	....	....	Subacute salpingitis
F. H.	42	7,800	74	....	....	24	2	....	....	Subacute salpingitis
B. C.	30	10,400	65	....	....	35	....	....	....	Subacute salpingitis
M. A.	37	13,600	54	4	7	25	9	....	1	Subacute salpingitis
M. S.	28	10,300	63	10	....	23	4	....	....	Subacute salpingitis
M. B.	27	11,000	74	....	....	24	2	....	....	Subacute salpingitis
M. I.	35	8,750	56	12	5	18	6	2	1	Subacute salpingitis
M. S.	28	11,400	76	....	....	23	1	....	....	Incomplete abortion
M. B.	29	7,600	72	....	....	22	6	....	....	Subacute salpingitis
M. B.	27	11,000	69	2	....	25	3	1	....	Subacute salpingitis
M. N.	34	7,300	44	30	4	16	4	2	....	Subacute salpingitis
B. B.	42	9,000	59	19	1	16	2	2	1	Subacute salpingitis
M. W.	120	7,300	59	....	....	34	6	1	....	Chronic salpingitis
M. S.	114	10,250	61	....	....	36	2	1	....	Chronic salpingitis
G. S.	58	7,850	74	....	....	23	1	2	....	Chronic salpingitis
V. P.	106	10,100	52	15	....	30	3	....	....	Chronic salpingitis
B. A.	71	10,400	65	....	....	35	....	....	....	Chronic salpingitis
M. C.	92	11,600	63	2	1	29	5	....	....	Chronic salpingitis
M. C.	111	9,640	71	....	....	28	1	....	....	Chronic salpingitis
M. W.	126	13,200	69	13	2	13	3	....	....	Chronic salpingitis
A. W.	79	12,000	57	17	1	19	5	1	....	Chronic salpingitis

Diseases of the Urinary Tract—In acute infections of the urinary tract, such as pyelitis, pyelonephritis, pyonephrosis, prostatitis and perinephritic abscess, rapid sedimentation times (under 30 minutes) were noted without exception (table 3). Usually the total leukocyte count and the Schilling count were in accord, but in two cases of pyonephrosis with urinary fistulas, the rapid sedimentation times were associated with fairly normal blood pictures. On the other hand, ureteral colic (stone) and other urologic conditions without associated gross infection were accompanied by fairly normal sedimentation times, emphasizing the importance of the latter in the differential diagnosis of pain in the lower right quadrant of the abdomen.

Appendicitis—Perhaps the most interesting and valuable finding is the relatively slow sedimentation time present in acute appendicitis without rupture. In a fairly representative series of cases (table 4) the average was 115 minutes, with variations between 45 and 300 minutes. In the subacute and chronic forms, there were even slower times, averaging 227 minutes, with variations between 51 and 540 minutes. As already noted, in right-sided inflammatory adnexal and urinary tract diseases there are more rapid sedimentation rates. Although the total white count and differential count are often valuable in differentiating these conditions from appendicitis, there is still a considerable group of cases in which such counts are either not characteristic or are borderline, making them misleading or valueless in the differential diagnosis. It is in this

TABLE 2.—NONINFLAMMATORY PELVIC DISEASES

Case	Sedimentation Time	White Blood Cells	Segmented Cells	Staff Cells	Young Cells	Lymphocytes	Monocytes	Eosinophils	Basophils	Diagnosis
M. C.	135	7,300	63	4	....	21	11	1	....	Retrodisplacement
M. C. A.	229	8,900	57	6	....	35	2	....	....	Rectocele, cystocele
M. F.	204	9,400	63	....	....	35	2	....	....	Simple fibroid tumor
M. W.	438	7,950	69	....	....	31	....	....	....	Cystic ovary and fibroid tumor
M. B.	73	7,800	78	....	....	22	....	....	....	Retrodisplacement
M. S.	240	10,200	61	....	....	36	2	1	....	Retrodisplacement
M. B.	50	7,500	58	....	....	39	3	....	....	Fibroid tumor
M. H.	61	6,450	65	....	....	31	1	2	1	Prolapsus uteri
P. C.	131	6,200	55	4	2	38	....	....	1	Prolapsus uteri
S. E.	83	9,850	66	....	....	32	2	....	....	Fibroid tumor (diabetes)
D. P.	181	15,600	74	....	....	22	3	1	....	Procidentia
M. C.	31	8,900	57	15	....	27	1	....	....	Fibroid with abscess
M. H.	14	19,700	68	18	1	13	....	....	....	Infected fibroid tumor
M. L.	45	11,800	72	8	2	15	3	....	....	Ectopic pregnancy, uncomplicated
H. B.	26	13,000	60	15	5	15	4	1	....	Ectopic pregnancy with adnexal disease

TABLE 3.—URINARY TRACT DISEASE

Case	Sedimentation Time	White Blood Cells	Segmented Cells	Staff Cells	Young Cells	Lymphocytes	Monocytes	Eosinophils	Basophils	Diagnosis
M. A.	234	9,600	67	9	....	21	....	1	2	Renal calculus
E. N.	76	6,000	43	20	4	28	5	....	....	Essential hematuria
W. H.	16	14,200	46	24	18	7	4	1	....	Pyonephrosis
M. B.	9	10,300	86	....	....	14	....	....	....	Pyonephrosis
M. R.	18	7,100	40	36	4	20	....	....	....	Acute hemorrhagic nephritis
M. C.	13	16,000	85	....	....	14	1	....	....	Infected prostate
M. W.	17	6,300	47	13	4	31	4	1	....	Urinary fistula
D. L.	17	12,600	69	15	....	15	1	....	....	Perinephritic abscess
M. W.	16	7,100	42	28	1	23	6	....	....	Urinary fistula
L. M. M.	18	9,700	56	8	....	30	6	....	....	Infected hydrocele
L. C.	17	10,500	....	....	....	....	....	....	....	Pyelonephritis
M. W.	30	15,400	79	....	....	21	....	....	....	Pyonephrosis
B. M.	150	8,400	70	....	....	30	....	....	....	Ureteral calculus
A. K.	300	7,200	68	....	....	32	....	....	....	Ureteral calculus
M. P.	8	11,200	80	....	....	16	4	....	....	Pyonephrosis
J. G.	430	9,300	73	....	....	27	....	....	....	Ureteral calculus

TABLE 4.—APPENDICITIS

Case	Sedimentation Time	White Blood Cells	Segmented Cells	Staff Cells	Young Cells	Lymphocytes	Monocytes	Eosinophils	Basophils	Diagnosis
L. M. K.	61	7,200	54	13	1	26	5	1	....	Acute (pregnancy)
M. K.	103	11,600	47	20	4	23	6	....	....	Acute
M. C.	180	15,400	84	....	....	13	3	....	....	Acute
M. C.	200	14,100	82	....	....	18	....	....	....	Acute
M. D.	48	7,600	52	6	3	35	1	3	....	Acute
L. J.	256	19,600	58	26	3	10	2	....	1	Acute
M. L.	131	18,200	54	32	3	7	4	....	....	Acute
M. M.	51	14,000	66	17	5	6	6	....	....	Acute
H. H.	58	14,000	48	19	4	23	6	....	....	Acute
M. P.	77	18,900	49	7	....	42	2	....	....	Acute
M. S.	52	13,000	49	13	1	23	4	9	1	Acute
E. H.	300	22,800	96	....	....	4	....	....	....	Acute
W. P.	240	18,300	91	....	....	9	....	....	....	Acute

Case	Sedimentation Time	White Blood Cells	Segmented Cells	Staff Cells	Young Cells	Lymphocytes	Monocytes	Eosinophils	Basophils	Diagnosis
O. H.	50	26,700	57	23	5	5	10	....	....	Acute
V. H.	150	13,200	58	32	....	6	4	....	....	Acute
A. P.	45	17,400	37	49	4	5	5	....	....	Acute
F. H.	170	17,000	34	4	....	56	4	2	....	Acute
M. S.	45	17,500	56	29	....	12	2	1	....	Acute
C. K.	148	16,100	73	....	....	21	4	....	2	Acute
H. B.	46	15,600	59	11	5	20	4	1	....	Acute
E. S.	142	11,800	78	....	....	22	....	....	....	Acute
L. F.	35	12,400	55	20	1	16	8	....	....	Acute (throat infection)
F. J.	150	10,200	63	16	....	14	5	2	....	Acute
M. M.	160	13,200	52	24	....	22	....	2	....	Acute
M. H.	75	10,000	76	....	....	24	....	....	....	Acute
E. C.	52	7,800	46	6	....	40	....	8	....	Acute
L. M. J.	100	14,800	33	26	....	34	4	3	....	Acute
M. T.	51	4,600	47	15	1	33	3	1	....	Subacute
M. W.	191	8,600	46	16	1	36	1	....	....	Subacute
D. D.	63	5,150	55	15	2	21	4	3	....	Subacute
M. H.	153	8,300	52	14	....	27	4	3	....	Subacute
M. J.	257	8,200	58	12	....	28	2	....	....	Subacute
M. N.	225	10,800	64	6	1	24	4	1	....	Subacute
A. H.	180	5,200	60	....	....	40	....	....	....	Subacute
V. H.	194	6,800	60	....	....	40	....	....	....	Subacute
D. R.	258	10,400	41	1	2	55	1	....	....	Subacute
L. S.	80	9,800	46	18	....	29	5	2	....	Subacute
N. C.	93	7,600	57	8	....	27	6	2	....	Subacute
M. M.	193	6,200	64	....	....	23	8	5	....	Subacute
C. S.	80	8,800	52	22	....	20	2	4	....	Subacute
J. R.	34	7,600	49	13	....	29	9	....	....	Subacute (active syphilis)
E. T.	180	9,600	42	2	1	33	13	8	1	Subacute
R. C.	185	9,250	58	10	4	20	5	2	1	Subacute
R. H.	360	7,400	42	4	....	50	4	....	....	Chronic
F. G.	26	8,200	62	....	....	30	5	2	1	Chronic (throat infection)
H. G.	240	9,000	70	....	....	25	5	....	....	Chronic
V. A.	210	4,600	46	6	....	37	8	3	....	Chronic
M. S.	28	9,600	61	12	....	21	5	1	....	Chronic (complicating infection)
W. K.	540	9,700	44	9	....	44	....	1	2	Chronic
E. K.	390	7,700	64	....	....	26	6	3	1	Chronic
M. Z.	420	12,880	76	....	....	24	....	....	....	Chronic
H. S.	90	6,600	50	7	....	30	9	4	....	Chronic
E. B.	190	7,600	49	18	....	33	....	....	....	Chronic
E. B.	526	10,400	54	5	....	34	3	4	....	Chronic
M. M.	360	6,700	65	7	....	28	....	....	....	Chronic
W. B.	490	8,500	52	3	....	33	5	6	1	Chronic
M. J.	190	7,600	45	17	....	34	2	2	....	Chronic
M. B.	320	9,800	74	....	....	22	2	2	....	Chronic
M. S.	191	8,600	48	9	1	35	6	1	....	Chronic
M. P.	540	9,000	46	13	2	35	4	....	....	Chronic
H. C.	22	15,200	45	33	3	19	....	....	....	Abscess and general peritonitis
C. L.	34	14,500	52	22	6	16	4	....	....	Ruptured appendix
D. M.	20	25,200	89	....	....	11	....	....	....	Ruptured appendix
A. H.	39	13,300	42	7	1	37	12	....	1	Abscess
R. J.	19	20,000	45	27	3	17	8	....	....	Retroperitoneal abscess
A. A.	33	14,000	55	18	3	15	9	....	....	Ruptured appendix
R. E.	22	10,800	63	....	....	37	....	....	....	Acute gangrenous, with free fluid
D. C.	30	16,400	84	....	....	14	2	....	....	Ruptured appendix

group particularly that the sedimentation test is often of the greatest value in helping to establish the true diagnosis. Of course, no diagnosis should be based on a single finding, but on a combined picture built up by a complete history, a thorough physical examination and indicated laboratory procedures. In my opinion, the sedimentation test helps to complete this picture, and is a most valuable aid in the differential diagnosis of disease in the lower right quadrant.

In cases of ruptured appendix, appendical abscesses and appendicitis with generalized peritonitis much more rapid settling times were noted than in uncomplicated appendicitis, the average for such cases being 27 minutes, with variations between 19 and 39 minutes. Since normal blood counts are sometimes found in such cases, the sedimentation test is often of great value in helping to make the diagnosis.

SUMMARY AND CONCLUSIONS

1. The blood sedimentation test is a simple and reliable means of diagnosis and prognosis in general surgical conditions, often surpassing the blood count in value.

2. It is of particular value in the differential diagnosis of appendicits from other pathologic conditions of the lower right quadrant of the abdomen.

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DISCUSSION

HENRY SCHMITZ, M. D. (Chicago, Ill.): I have listened to this paper with a great deal of interest. In 1926 we published in The American Journal of Obstetrics and Gynecology some eighty cases of the same character as the essayist has studied. Careful blood examinations were taken, and the temperature, and particularly the local tenderness were watched. The indications for the safe time of operability observed in these cases were normal white blood count, absence of rise in temperature for eight days and absence of local tenderness. Sedimentation rates were made in all cases. Operations were performed regardless of the sedimentation time. Morbidity or mortality apparently did not have any relation to the sedimentation rate. The conclusion was reached that the sedimentation time did not help in determining the safe time for operation.

One of my associates, Dr. Simunich, performed careful blood counts, the sedimentation rate and virulency tests in another 150 consecutive cases that came for operation. They, also, have been published in the American Journal of Obstetrics and Gynecology. Five cubic centimeters of blood were taken from the arm vein, defibrinated, inoculated with the cervical discharge and incubated for 4 hours. Several cases of streptococcus hemolyticus were seen. Complications occurred after operation in about 6 per cent of the cases with a sedimentation time of 30 minutes or less. But in every complication a positive growth was found by the virulency test. Hence the conclusion was reached that the virulency test gives a better indication for the safe time of operation than the sedimentation rate.

DR. GRODINSKY (closing): As to the question of the value of the test as a means of diagnosis, I can see where there might be room for error, if used alone. I merely want to record what has been done along this line; and am not trying to substitute this test for other methods of diagnosis. Rather, I consider it an additional means, at times very valuable, particularly in the differential diagnosis of lower right quadrant disease. There is such a marked difference in the rate between the ordinary case of appendicitis, seen early, and pelvic infection, that it may be considered of great diagnostic significance.

Where one is dealing with a case apparently free of infection, and gets an acceleration of the settling time, it does not necessarily rule out infection. Many times the seat of the infection will show up at some later date, although it may not be easily seen at the time of the original examination. I would still feel there is some type of infection present which is causing the reaction, in spite of the fact that the first examination does not reveal it.

THERAPEUTIC USE OF ANTIPOLIOMYELITIS SERUM IN PREPARALYTIC CASES OF POLIOMYELITIS

The results of observations made by William H. Park, New York (*Journal A. M. A.*, Sept. 24, 1932), on treated and untreated patients in the preparalytic stage of poliomyelitis during the 1931 outbreak do not give any statistical proof that the serum has any value when given in cases after the cells of the central nervous system are involved. The fact that the report of Kramer, Aycock and their co-workers, which also deals with patients treated with serum and those not treated, gives similar results is of great importance. Nevertheless, the uniformly optimistic opinions of those who have not observed untreated patients for a comparison cannot be entirely disregarded. The author believes that in the future it could be arranged to have both the treated and the untreated patients observed by impartial judges so that a final correct judgment might be formed and generally accepted.

Patient—"The size of your bill simply makes my blood boil."

Dr. Gouger—"That will be $20 more for sterilizing your system."

PROGNOSIS IN SURGERY OF THE ABDOMEN: THE ACUTE APPENDIX (CONCLUDED)
ACUTE PANCREATITIS

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Before discussing the subject of acute pancreatitis I want to throw out a warning about always urging early operation in acute appendicitis. As stated in the November issue of the *Journal,* it is recognized the world over that the safe, proper, procedure to be carried out in an acute attack of appendicitis is to operate early, the earlier the better. The usual time limit for this advice is to operate within 48 hours. This, of course, has certain at least suggestive restrictions. For example, it might be the wiser position not to operate immediately upon a patient presenting a serious anaemia, a marked azotemia, advanced renal disease, a leukemic blood picture. Again there are certain individuals whose general make-up and life habits puts them in a class of bad surgical risks: the wise physician avoids operating upon such subjects. When demanded, however, he chooses the least shocking procedure—(1) he relieves, if possible, the life threatening pathology, (2) he drains but does not disturb the source, hoping that in each instance he may be able to do more thorough work should nature not herself bring about a satisfactory cure.

In a recent issue of the *London Lancet,* Sir James Berry emphasizes this position in a most illuminating way: The late King Edward VII of England was taken with an acute attack of appendicitis at the age of sixty-one years. He was a heavily built man, had lead a life of late hours, not altogether given to mental improvement, a strenuous life as Prince of Wales up to the age of sixty years, when he became King. His wise physicians and the great surgeon Treves did not think an immediate operation advisable. It would have been a dangerous procedure in their judgment. A localized abscess formed which on the 9th day from the beginning of the attack was drained, the appendix not disturbed. The wound healed and the King lived eight years thereafter with no further symptoms of discomfort from the cause of his operation.

The Emperor of Germany, a somewhat younger man, age fifty-four years, but oldish and stout, living under high tension, was also taken with an acute attack of appendicitis. History: In the night slight abdominal pain; next day, 9 a. m., seen by physician; 5:30 p. m., severe abdominal pain, doctor sent for at 6 p. m., tenderness and slight rigidity in right iliac fossa; 9 p. m., first seen by surgeon. Immediate operation decided upon, moved to a hospital; 12 midnight, operation. Free incision into peritoneal cavity, appendix removed, non-perforated; turbid non-odorus fluid about the appendix area, intestines distended, no fluid in pelvis. Death on fourth day post-operative.

Both patients were treated by famous physicians and surgeons, and in accordance with the practices advised at those dates, viz.,—in the first instance, *do not* operate immediately upon every case of acute appendicitis: select your material, judge patients—not cases; in the second instance, every case of acute appendicitis *should be* operated upon as soon as possible, within the first 48 hours, the sooner the safer. This last is a good rule, with exceptions indicated, when a safe surgeon is available, otherwise it is dangerous to have an operation performed. It is safer to starve the patient. Under no circumstances should purgatives or enemata be given, the bowel should be kept absolutely at rest so long as there is any chance of an abscess forming. Usually thus treated the attack may subside. Do not give drugs to relieve abdominal distention—this is a protection and curative and not harmful in itself. Berry emphasizes this point and says although "distention is often a grave symptom, its sudden removal is often much more grave." When an abscess forms it should be opened if practicable, without opening the general peritoneal cavity. Sometimes it is more safely opened through the rectum.

When not to operate upon a patient suffering from an attack of acute appendicitis requires judgment, which in the physician means something beyond picturing to himself the local pathology, the usual subjective and objective diagnostic signs, the laboratory findings. Judgment, as I see it, in a physician means an ability to appraise carefully personal experiences, and the teachings of others in whom we have learned to have confidence. It is not every physician, however book learned he may be, who has good judgment at times when it means so much. It can to a degree be acquired but at its best it is individualistic—above all it must be by nature free from self-interest.

* * * * *

ACUTE PANCREATITIS

To Reginald H. Fitz of Boston, we owe the first analytical description of the pathologic and clinical analysis of acute pancreatitis. Before the New York Pathological Society, February, 1889, Fitz delivered the Midlothian Lecture. His title was: "Acute Pancreatitis—A Consideration of Pancreatis Hemorrhage. Hemorrhagic, Suppurative and Gangrenous Pancreatitis. Disseminated Fat Necrosis."

At intervals of years, case reports of inflammations and diseases of the pancreas had earlier appeared in the literature, but they were rather haphazard in character and no noteworthy attempt had been made to classify the lesions.

The honor of teaching the profession that "perityphlitis" was in reality an advanced stage of an inflammation having its origin in the vermiform appendix also belongs to Dr. Fitz, and it is to him that we owe the name appendicitis. Let it be remembered also that Lawson Tait of Birmingham, England, and his disciple in this country, Joseph Price of Philadelphia, brought us out of our ignorance as to the pathology of acute inflammations of the female pelvis. Older surgeons remember well how difficult it was for our teachers to accept the new pathology. In New York City, distinguished men argued whether "perityphlitis" (appendicitis) was an intra or extra peritoneal disease, and many bitter controversies took place in Philadelphia before Joseph Price could convince the leading gynecologists and their friends in that city, by presentation of his specimens, that "pelvic cellulitis" was in reality an inflammation having its origin in the Fallopian Tubes.

I mention these incidents to call attention to the fact of how much we owe to the memory of Dr. Fitz and our late colleague of Philadelphia for what they did for American medicine and for what further advancement of their labors has done for mankind throughout the world.

When we recall the contiguity of relationship of the pancreas with the stomach, the duodenum and gallbladder, the intimate connections of the biliary ducts with those of the pancreas, the rich lymphatic arrangement of the pancreas which anastomoses with the lymphatics of the stomach, duodenum, bile ducts, gallbladder and liver; and the intimate anastomatic blood supply, it is a natural corollary that there must be a sympathetic interdependence between the functional activity of these parts in health. When a pathological process is inaugurated in one, its expression may be more or less intensely activated in another. Inflammation of the pancreas which is chiefly confined to the ascini of the gland does not markedly effect carbohydrate metabolism, hence does not produce diabetes except possibly that of a transitory nature; in fact, animal experimentation and clinical observation has proven that a considerable portion, 1/8th to 1/4th of the gland, may be destroyed and yet the subjects recover and exist in comparative health without the occurrence of diabetes.

Rapid hemorrhage into the pancreas sufficient to bring on a fatality in a few hours is best explained by a degeneration of the vascular system of the gland—an apoplexy, or some as yet not discovered toxic substance which activates he ascinal secretion to destroy the vascular walls of the rich blood supply of the pancreas.

Whatever may be the exciting incident of an acute pancreatitis, I am convinced that infection by one of the routes enumerated is the cause. We know that chemicals injected into the ducts result in inflammation and hemorrhage but this is in effect a traumatism and the entrance of sterile bile into the duct of Wirsung by a damming back at the ampulla of Vater is also a traumatism and not necessarily of great importance. It is only when infection is carried to the pancreas either through its blood vessels or lymphatics from an infection of a contiguous organ or the general circulation that pancreatitis develops. Of course, infected bile may spread infection to the pancreas through its ducts. It is stated that 60% of cases of acute pancreatitis are complicated by gallstones. All of the patients of whom I have personal knowledge where it was possible to examine the gallbladder and gall ducts, either at operation or post mortem, had gallstones. Five cases were seen by my neighbor, Dr. A. A. Johnson of Council Bluffs, within 15 months, *all* had gallstones, and were operated upon by the late Dr. Donald Macrae.

If the many gallbladders which are being removed daily for different degrees of infection with and without gallstones are considered, it is readily conceivable that a low grade or high grade inflammation of the pancreas may be a secondary association with an infection of the liver and gallbladder. Acute inflammations of the pancreas are sometimes local in type and may then lead to the formation of abscess most commonly in the head of the gland or else rather diffuse central or surface hemorrhages occur with necrosis and disintergation of the gland. the ascinal secretion practically digesting the gland tissue and spreading as a brown colored thin fluid into the general peritoneal cavity. Accompanying this inflammatory process a very interesting further change takes place in the surrounding fatty tissues, also in the omentum and mesentary, —a fat necrosis—indeed this necrosis has been found widely distributed within the abdomen and even in the chest cavity—in one of my cases it was distinguished by bosselations and two distinct local bluish discolorations of the skin in the median line just above and below the umbilicus.

Physiologists have not as far as I am informed agreed upon the causative agent of fat necrosis, whether it is due to escape of the gland juice or what is more probable a fat splitting ferment is disseminated through the lymphatics from the pancreas, spreading in a greater or lesser extent.

I have thought it proper to skeletonize some of our knowledge of the pancreas and its inflammations before discussing the question of diagnosis. (Mayo, Robson, Opie, Deaver, and others).

The diagnosis of acute pancreatitis is seldom made except at operation for some other supposed pathology or at post mortem examination. The disease is a rare one but not so rare as text books and magazine writers would have us believe. It must be that many cases are overlooked; it has certain characteristics whose manifestations should lead to its oftener recognition than is true.

Dieulafoy, in describing what he calls "le drame pancreatique" (pancreatic drama), says, "at a time when it appears there is little reason for uneasiness, and when the individual has little or no icterus, terrible symptoms, which most often terminate in death, are ushered in. The sufferer is taken with atrocious pains in the umbilical region, in the epigastric region and in the hypochondriac region. The pains are agonizing, excruciating and are accompanied by vomiting, by prostration, and a tendency to syncopy; abdominal hyperasthesia is generalized, constipation is absolute and there is not the least passage of gas.

"Faced with a like situation, one naturally thinks of an acute peritonitis, of a poison, a perforation of the stomach, the duodenum or the gallbladder; one thinks of an appendicitis, an intestinal obstruction; but in reality there is no comparison (there is nothing to it), and I have given to this episode the name of 'drame pancreatique' in order to distinguish it from everything which can resemble it. And in effect, whether at operation or at autopsy, one finds not a peritonitis, not a perforation of an organ, not an appendicitis, not an intestinal obstruction, but one finds the specific anatomical evidences of the drama, that is to say, white islets, (wax like spots) of fat necrosis, with which are often associated pancreatical-peritoneal hemorrhages, lesions almost always due to the sudden development of an acute pancreatitis grafted upon a chronic pancreatitis." Martinet in ending this quotation, says that the diagnosis is rarely made, it rests, however, upon the pancreatico-biliary antecedents, the syndrome "dramatique" and above all on the examination by sight of the lesions in the course of a laparatomy which is indicated under any hypothesis.

The rather pessimistic view taken by Dieulafoy as to the possibility of making an early diagnosis of acute pancreatitis, and differentiating it from the several enumerated conditions which go to make up the pathogenesis of the "acute abdomen" is based upon general experience. I am persuaded that all of the lesions named for which acute pancreatitis is mistaken should almost always be recognized and as a rule differentiated from one another.

I would like, if I may, to point out some of the chief identifying symptoms of the rather common perforation of the duodenum or stomach for which acute pancreatitis is most often mistaken. In the majority of cases the diagnosis should be made and early. When this is done the prognosis is good, delay is usually fatal.

The symptoms of all perforations vary with the length of time which has elapsed. It is the same in acute pancreatitis, the time of the perforation corresponding with the seizure of the pancreatic crisis.

There is greater shock in acute pancreatitis than in perforating ulcer, in the typical case; the pain is more excruciating, breathing is very shallow and more difficult, vomiting is more persistent.

Pelvic pain as evidenced by rectal or vaginal examination is earlier exhibited and more marked in perforated ulcer than in acute pancreatitis. Shoulder pain (top) and back pain, if they exist, are found upon the left side in acute pancreatitis, more likely upon the right side in the ulcer case.

In the stage of shock, cyanosis is always a prominent symptom, it seems to have a great significance and to be more marked than the same symptom in perforating ulcer. The pulse is usually fast and weak; it may have the shock characteristic sometimes observed in other conditions of being slow and weak.

There is greater tenderness perhaps than we are accustomed to elicit in perforating ulcer, board-like hardness of the abdomen is more marked, and distention of the upper abdomen comes on very early, more so than in ulcer perforation. The temperature is in the beginning and early periods of the attack sub-normal or normal, later it takes on that of a peritonitis.

The histories, if the patient's condition admit of their being given, differ. In the one, there is the characteristic dyspeptic history of ulcer, in the other the history is more apt to resemble that of a mild gallbladder infection. There is apt in a pancreas case to be a slight icterus present or a history of its having been noticed in the recent past.

In the early stage before distention occurs, it is possible that the enlarged pancreas may be palpable.

As in perforated ulcer, acute pancreatitis develops into an acute peritonitis traveling from above downward.

The presence of gas in the peritoneal cavity may be recognized early by decreased liver dullness. this pointing towards perforation. It is not a dependable symptom, however, I mean its recognition.

It is in the ability of the physician to recognize the lesions for which acute pancreatitis may be mistaken that one may by a process of elimination make a true diagnosis.

Just how a physician would confuse an acute intestinal obstruction in the early stages with an acute pancreatitis I cannot see, yet it has often been done, and much valuable time wasted in seeking the suspected occluded loop. The abdominal symptoms in the two lesions have few resemblances. In obstruction, there is an absence of the true board-like hardness always present in the pancreas lesion and peristalsis is absolutely inhibited in the early period—it can always be heard at this time with the stethoscope in obstruction and even the site of the obstruction can occasionally be determined. Why 50% of all cases of intestinal obstruction are not early recognized is a reproach to the profession and progress in this respect is anything but creditable. There should be little difficulty in differentiating acute appendicitis from acute pancreatitis, yet the mistake is occasionally made. Deaver reported having done so, an index that anybody may.

It will hardly be profitable to discuss all of the lesions of the abdomen that produce symptoms simulating those of the true "acute abdomen." They, in fact, present before the general development of peritonitis when this follows, few symptoms justifying a comparison with acute pancreatitis.

In a paper which I read before the Western Surgical Association in 1914, I called especial attention to some of the acute perforations of the abdomen, as examples, reporting five cases of acute perforations of the duodenum; one, not operated upon, died, the others recovered after operation. In this paper I also told of four cases of acute pancreatitis operated upon by me. There was a gallstone history and gallstones were present in three (two were hemorrhagic), and in the fourth (acute abscess) drainage of the gallbladder was finally necessary to cure a second attack. Of these four cases, two recovered, the diagnosis before operation was made in one.

Curiously enough, although I have seen quite a large number of cases of perforation of the duodenum since 1914, I have only seen four cases of true acute pancreatitis; two recovered following operation (diagnosis made at operation); the others died really unoperated upon. In one an incision was made to open a supposed abscess in the abdominal wall, acute pancreatitis had been a suspected diagnosis by me and a physician member of the hospital staff. It was the diagnosis declared by myself at the post mortem before the abdomen was opened.

My most recent case of acute pancreatitis, a man 35 years of age, had a possible mild cholecystitis history. He was taken ill at 8 o'clock in the evening with most excruciating pain in the abdomen. He was seen by me at 10 o'clock; the abdominal wall was hard and board-like, especially high up. Severe back pain; fast feeble pulse, temperature nearly normal, man in shock. Diagnosis, perforated ulcer-gastric or duodenal. Operation at midnight. The head of the pancreas was hemorrhagic, gangrenous, breaking down along side of the duodenum and discharging a material like soft brain tissue. A coffer dam gauze drain was established and the abdominal incision closed only in part. To the astonishment of everyone interested the man recovered.

The only treatment for acute pancreatitis is abdominal incision and drainage. I have drained successfully the lesser peritoneal cavity, the hemorrhagic pancreas bursting into it, the gauze drain being through the gastro-hepatic omentum.

(To be continued.)

Diner: "I'm hungry enough to eat a horse!"
Waiter: "O. K., Buddy! You came to the right place."

THE TREATMENT OF CARDIOVASCULAR SYPHILIS*

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Practically speaking, we are never treating an isolated disease; we are treating a particular individual with the disease. If our treatment is to meet with any degree of success, therefore, it must be highly individualized. This truism is never more applicable than in handling a patient with cardiovascular syphilis.

In treating an otherwise healthy young adult with primary or secondary lues a so-called routine treatment has its place. A course of salvarsan or neosalvarsan injections, a course of mercury or bismuth with rest periods at intervals, constitute the routine. With modifications suitable to the particular case such a method is satisfactory.

When such vital organs as the heart, liver, or brain are involved we are facing an entirely different problem. An attempt to apply such a routine may result in disaster. The treatment of cardiovascular disease of luetic origin is a difficult and much debated problem. Some physicians would withhold all specific therapy, while others advise vigorous treatment.

Before giving arsenicals to this class of patients, we should realize that their use carries with it a definite danger. Antiluetic treatment of any type may, at times, leave the heart and aorta in a condition worse from a functional standpoint than before treatment was instituted.

There is nothing new in a statement of these facts and yet, I feel, the profession as a whole does not appreciate their importance. During the past year or so we have seen several examples of this.

We saw in consultation a man dying with the symptoms of coronary occlusion. He had been admitted to the hospital one week previously with a diagnosis of aortic insufficiency and a moderate degree of congestive heart failure. When the Wassermann was reported to be four plus, .6 grams of neosalvarsan was given. Two days later a second dose was given. On the next day the coronary occlusion occurred.

A second case was sent into the hospital with a diagnosis of coronary occlusion. The Wassermann was two plus. An injection of neosalvarsan was given. The patient died the same day, undoubtedly of the original cardiac infarct. The administration of the neosalvarsan was, I feel, poor judgment.

A few years ago a Negro was sent to the hospital with an aortic aneurysm. When the Wassermann was found to be positive, an ambitious intern on his own responsibility gave him an injection of neo. The following day the aneurysm ruptured.

In order to discuss the treatment of cardiovascular lues intelligibly, a brief review of the development and pathology of the condition may not be out of place.

Following the initial infection, there is usually a period of from fifteen to twenty-five years, the so-called latent period, during which the individual is symptom free. Manifest cardiovascular disease is most often seen between the ages of forty-five and fifty, a time of life at which achievement should be at is peak. Because of the possibility of acquiring the disease late in life and because of the rare case of heart disease as a result of congenital infection, it may be seen at any age. Members of the lower social and economic order are more subject to cardiac involvement. Stokes, in a large series of cases, found the highly important fact that 54% of these patients have evidences of concomitant involvement of the nervous system.

One may classify the lesions of syphilis as they affect the heart and aorta as follows: (1) An aortitis. If this is not checked, an aortic insufficiency, an aneurysm or coronary disease will usually develop. (2) A diffuse inflammatory reaction in the myocardium. Whartin especially has emphasized this finding in cases of sudden death. The frequency of this type is uncertain. Other pathologists have been unable to substantiate his findings and feel that the importance of the myocardial type has been exaggerated. (3) Invasion of the heart muscle by gumma. While this type occurs at times, it is relatively unimportant because of its rarity.

The treponema, unquestionably, reach the aorta during the stage of blood stream invasion in the earliest stage of the disease. There may be an affinity between the organism and the aorta in certain individuals just as there seems to be an affinity for the nervous system in a different type. The rich supply of small vessels at the root of the aorta may be a factor in the localization at this point, as lues is primarily a disease of small blood vessels. Klotz first called attention to the lymphatic distribution to the aorta. During the stage of spirochetemia many of the organisms, passing through the lungs, are filtered out by the lymphatics and reach the lymph glands lying at the root of the aorta and the bifurcation of the trachea. They are gradually spread from these reservoirs by retrograde lymphatic extension to the aorta, where they set up a periaortitis and a mediastinitis, and later reach the media producing the typical luetic mesaortitis. The existence of a mediastinitis can be shown pathologically. It is also evidenced by the fuzzy appearance of an aneurysm often seen on the x-ray film. After antiluetic treatment the outline becomes sharp and distinct. Further, a melting away of this mediastinal factor may often account for the relief of symptoms afforded certain cases of aneurysm with no demonstrable change in its size and often with increased pulsation.

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In the majority of cases that portion of the aorta just above the aortic valves is attacked first. The earliest macroscopic lesion is often a triangular patch of involvement just above a commissure of the valves. A downward extension of the process separates the valves at the commissure and renders them incompetent. Dilatation of the aortic ring and still later actual disease of the valve itself adds to the difficulty.

It is not hard to see how an opening of the coronary artery may be encroached upon. Unless there is an associated arteriosclerosis, the lumen of the artery beyond its mouth is unaffected.

When an aortic insufficiency fails to develop with its consequent release of diastolic pressure, the aortic wall, weakened by a loss of elastic fibers from a mesaortitis. gives way and an aneurism is formed. In luetic aortitis the prognosis and the results to be expected from treatment will depend not only on the stage of the process but on the relative proportion of scar to active inflammatory tissue.

Adequate treatment of the patient during the primary or secondary stage, combined with prolonged careful observation, may be expected to prevent much, if not all, of the cardiovascular disease seen in the neglected case. If we are fortunate enough to establish a diagnosis in the latent period, an arrest or even a complete resolution of the aortitis may be possible. When signs or symptoms are present which make a diagnosis more or less obvious, the chance for arrest or cure is usually gone. Life expectancy is, only, too often, a matter of months to a few years.

A diagnosis in the latent stage may often be impossible. Yet, a complete history, a careful physical examination, the Wassermann and the x-ray may at times, enable us to institute treatment while there is still a chance for cure.

With an uncomplicated aortitis the following symptoms may be present: (1) Pain beneath the sternum. (2) Paroxysmal dyspnea or the so-called aortic dyspnea is not infrequent. (3) Fever of unexplained origin may be present but is rare.

The following physical signs may be found: (1) A systolic murmur at the aortic area. (2) A peculiar ringing quality of the aortic second sound. Potain compared this to the sound produced by striking the tabourka, an Algerian drum, made by stretching a skin across an earthen pot. (2) A widening of the supracardiac dulness or dilatation of the aorta on the x-ray film. In the absence of valvular or coronary disease the heart is not enlarged. While none of these signs are pathognomonic, they form part of a general picture which may establish the correct diagnosis.

In considering a diagnosis of a possible luetic heart disease the following facts should be borne in mind:

1. Lues is no respector of persons: it is found among all races and classes. It should receive at least, consideration in any adult with a cardiac disturbance.
2. An etiological diagnosis of heart disease should always be attempted. If the practitioner will accustom himself to think of heart disease in the terms of rheumatic, arteriosclerotic, hypertensive, syphilitic, hyperthyroid, etc., it will help. Chronic myocarditis is a term which should usually be avoided.
3. A history of a chancre is obtained in less than one-third of the cases.
4. The Wassermann is positive in from seventy to eighty per cent of proven cases. Twenty to thirty per cent of cases, therefore, will have a negative Wassermann.
5. In fifty per cent of cases there are signs of involvement of the nervous system. A fixed pupil, a ptosis, an absent knee jerk, may clinch the diagnosis.
6. Other stigmata of syphilis are often present such as skin lesions or scars, a scar on the prepuce, epitrochlear glands or anal condylomata.
7. The electrocardiogram, while aiding at times in the estimation of myocardial or coronary involvement, gives no clue as to the underlying etiology.
8. A therapeutic test may be indicated in certain cases.

We do not wish to discuss in detail the diagnosis of the complications of aortitis. Aortic insufficiency must be differentiated from rheumatic valve disease and from an arteriosclerotic deformity of the valve which occasionally occurs. Syphilitic disease occurs later than the rheumatic, earlier than the arteriosclerotic. The diastolic murmur is often quite faiint and may be heard only in the upright position. A rheumatic history and an absence of aortic dilatation speak for rheumatic endocarditis. Organic mitral disease is never produced by lues and, therefore, its presence means a rheumatic and not luetic etiology. It should be remembered, however, that a functional mitral systolic murmur or the functional presystolic murmur of Austin Flint may be present with luetic aortic insufficiency. Lues never produces an aortic stenosis (a systolic murmur alone does not spell stenosis).

Coronary involvement must be differentiated from the non-luetic type.

Aortic aneurysm must be differentiated from arteriosclerotic widening of the aorta, and at times from mediastinal tumor. There may be other causes of aortic aneurysm than syphilis but they are extremely rare and are hard to prove. A definite aortic aneurysm should be considered luetic in origin.

Never should we institute treatment on the basis of a positive Wasserman alone; we must first study the patient. We must determine the state of his aorta, his heart, kidneys and nervous system. Never lose sight of the fact that the patient may and usually does need many of the therapeutic measures that the non-syphilitic cardiac patient requires. Rest, both physical and mental, digitalis, diuretics, nitrites, morphine, etc., all have their place.

The most difficult question to decide is the proper handling of antiluetic drugs. Specific medication is given for the purpose of destroying the treponema and inducing a resolution of the specific lesions. Favorable results may be expected in the case in which inflammatory tissue is present in greater proportion than scar. In any case, as the specific lesions resolve, replacement fibrosis occurs. The resulting increase in scar tissue may further damage a diseased valve or further narrow a coronary artery. In the myocardium muscular tissue may be replaced by non-functioning scar tissue. Occasionally, then, we must expect to see our patient grow worse under treatment. Rarely he may die, as a result of treatment; healing may be fatal. This has been called the "therapeutic paradox."

Mercury and iodides act much more slowly than salvarsan. In using the former drugs nature is often given an opportunity to make a physiological adjustment to the increased scar tissue formation. If we shrink up the opening of a coronary with neo, no time is given for a compensatory circulation to become established. The same thing is true of producing more damage to the aortic valve or myocardium. We do not give nature a chance to adjust herself to the aggravation of the existing lesions.

A second ever present danger in the use of the arsenicals is the possibility of producing a "Herxheimer reaction." This consists in a flare-up of the local syphilitic lesion and is a toxic manifestion of the drug. A sudden swelling of the opening of a coronary artery may produce total occlusion; in the wall of an aneurysm, it favors rupture from the associated edema.

When congestive heart failure is present, all antiluetic drugs should be withheld until compensation has been restored. When the usual measures for heart failure have failed to restore compensation, mercury and iodides may be given as a last resort with an occasional good result.

Coronary disease should always be handled with caution. A thorough preparatory course of mercury and iodides should precede the use of the arsenicals. Neo. is preferable to salvarsan. It should be started in small doses not over .1 gm. It is often advisable to have the patient in bed for a day or two after the first few doses. If no untoward symptoms develop, the dose may be cautiously increased.

An aortic aneurysm of any size can never be cured. In the smaller types an arrest of growth may be obtained. Even in the larger tumors, symptomatic relief may be afforded, possibly as a result of the liberation of adhesions resulting from the medistinitis or periaortitis.

SUMMARY

1. Adequate treatment of the primary or secondary stage of syphilis will prevent much if not all of the later cardiovascular disease.

2. When treatment in the latent stage is instituted, an early aortitis may be cured or its progress arrested.

3. Treatment should not be instituted on the basis of a positive Wassermann reaction alone. We must treat the patient as well as the disease.

4. Once manifest heart disease is present, the prognosis is usually bad. Arrest may at times, be secured. Anti-luetic treatment often will effect symptomatic improvement. It may at times, by aggravating the lesions present, make the patient worse.

5. The use of neosalvarsan or salvarson, except possibly in uncomplicated aortitis, should always be preceded by a thorough preparatory course of mercury and iodides. In this way a Herxheimer reaction is avoided, and too rapid healing of the lesions is prevented.

6. A patient with syphilitic heart disease, is suffering not only from lues but is suffering from heart disease and, therefore, needs the same

careful attention which we give an arteriosclerotic or rheumatic case.

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DISCUSSION

A. D. DUNN, M. D. (Omaha): I think it is very valuable to bring the syphilitic aortitis and its clinical sequence before our medical societies at definite intervals. I have been interested in this problem for thirty years. One of the first papers I presented was on this subject, in 1889. It is valuable to bring the subject before ourselves at frequent intervals, because if a condition is suspected, it is more likely to be diagnosed than if not suspected.

The presence of an aortitis in an individual over thirty is almost certain to be of luetic origin if we can rule out Wassermann. We have had a number of cases under treatment with satisfactory results in whom the Wassermann has been negative. In two postmortems, we were able, in spite of the presence of a negative Wassermann, to designate the presence of spirochetes. I think we should not be too ready to make an unfavorable prognosis because these patients have a definite aortitis. I have an individual who has lived fourteen years. Another lived sixteen years with the disease, and then succumbed with a subacute endo-arteritis. We have frequently a streptococcic infection with a type of endocarditis.

Another way in which syphilis may affect the heart, which is extremely rare, is pericarditis. I have run on an individual with pericarditis. It came to autopsy. The lesions could not be differentiated from lesions in the aorta proper, under the microscope.

FRANK CONLIN, M. D. (Omaha): I want to compliment Doctor Traynor on his common sense viewpoint in his consideration of the subject, "Aortic Disease."

I should like to ask if, in his experience, he has found there is a difference in the vascular phenomena such as Corrigan's pulse, capillary pulse, etc., in the rheumatic type as compared with the luetic. In my own experience, the rheumatic type does not show as typical vascular phenomena as does the luetic. The diastolic pressure, for example, never is as low. I have used this as a diagnostic and prognostic finding.

Doctor Traynor emphasized the importance of using mercury and iodides in the treatment of this type of lesion. In this type of case we have an involvement of the tunica media causing a mesiaortitis. When we realize that the iodides are supposed to have a softening effect upon blood vessels and to also increase the fluidity of the blood, thus allowing the mercury to act upon the spirochetes imbedded in the tunica media, the reasonableness of a thorough course of mercury and iodides is evident.

DR. TRAYNOR (closing): I wish to thank the gentlemen for their discussion. I did not wish to give a bad prognosis in these cases still in the stage of an uncomplicated aortitis. Too often we see them with aneurysm or aortic insufficiency, and the outlook is not good. One can obtain gratifying results in many cases, even with aneurysm. I recall one man who was fortunate enough to have the disease affect his descending aorta. By rest in bed and iodides and mercury and small doses of neo, he has been carrying on his occupation for eighteen months, and his Wassermann has become negative.

I have never seen a case of pericarditis due to lues. I can see how it could occur.

In answer to Dr. Conlin's question, the peripheral phenomena are practically the same as in the rheumatic type. I do not see why they should not occur except in a very early case.

PROGRESS OF SURGERY

(A Review of the Literature for the Last Six Months of 1932)

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THORAX

Heuer(1) believes that the main factor in the obliteration of the pleural cavity after drainage of empyemas is the development and contraction of granulation tissue upon the visceral pleura at its junction with the parietal pleura. This traction or contraction continues until the visceral and parietal pleurae come in contact with each other and fuse. This view suggests that the healing of empyema is analogous to the healing of wounds elsewhere. Heuer advocates treatment of acute empyema by closed aspiration drainage and irrigations every two hours with Dakin's solution.

GASTRO-ENTEROLOGY

Cox(2) has done a very excellent investigative work upon dogs in regard to the changes in the bile ducts and parietal sacculi following a cholecystectomy. Within thirty days of this operation, dilatations of the parietal sacculi of the extrahepatic bile ducts had made their appearance and also the so-called folding or villous-like projections were seen. These are not actual villi, as is thought by many, but serial sections showed them to be merely the walls of enormously dilated sacculi. The intrahepatic ducts, situated in the liver, proper and supported on all sides by non-distensible tissue, were conspicuous in their failure to show the changes which were so evident in their continuations outside the hepatic substance.

In man the same changes were found with gross dilatation of the extrahepatic ducts proportional to the amount of obstruction at the sphinter of Oddi. There was also a slight increase microscopically in the amount of elastic tissue in the walls of the ducts. The parietal sacculi are not glands. There are no such structures as true mucous glands of the bile ducts. True, their lining epithelium secretes mucus just as does the epithelium of the ducts and gallbladder.

The increased duct tension following cholecystectomy progresses until equilibrium is established between the dilating ability of the elastic tissue of the walls of the ducts and the point at which the pressure is such as to overcome the sphincteric mechanism at the duodenal end of the common bile duct, at which time the bile is expelled into the intestine.

Lewisohn(3) experimented in animals by using thorotrast intravenously on animals as a means of visualization of the liver and spleen. Then he used it on six patients. This substance is a thorium-dioxide solution originally used by Radt to demonstrate roentgenographically pathological changes in the liver and spleen as it is deposited in the cells of the reticulo-endothelial system. Thorotrast is prepared by the Heyden Chemical Company in ampoules of 12 cubic centimeters. It is injected intravenously on three or four successive days. The patient is roentgenographed on the fourth or fifth day. The injections are not followed by any immediate ill effects. However, theoretically at least, it is possible that there may be harmful late effects, as the major part of the injected substance seems to remain in the liver and spleen more or less permanently. The roentgenogram does not reveal the finer details of structure. Its value in the clinical diagnosis of a pathological condition in the liver and spleen is limited.

Ackman and Ross(4) have reported a typical case of pancreatic lithiasis, a rare condition with only slightly over 100 cases reported in the literature. They stated that epigastric pain of both dull and colic-like nature was the commonest symptom, but there was no consistency in radiation. Steatorrhoea and diarrhoea were frequent, and occasionally calculi were found in the stools. Late in the disease there was frequently glycosuria due to damage of the islands of Langerhans. Jaundice occasionally was present. The roentgen-ray was valuable in the diagnosis but sometimes misleading. A peculiar crepitus has been described when there were multiple stones.

Surgical treatment has yielded gratifying results with a mortality rate of 6.5 per cent. Pathologically it began as a chronic interlobular pancreatitis which gradually involved the whole gland in a fibrotic process, with resultant atrophy and loss of parenchyma. The islands of Langerhans were last to be involved. The calculi were composed mainly of calcium carbonate and calcium phosphate, which was suggestive of an inflammatory etiology.

Singer(5) is the first American to report cases of pneumoperitoneum in which the mechanism involved is a valvular one similar to that which exists in the chest in cases of valvular pneumothorax. The responsible lesion is generally a perforation of a gas-containing viscus or an abdominal fistula. Including Singer's four cases, there are twenty-eight reported in the literature.

With a small amount of gas in the peritoneal cavity, the symptoms are insignificant. If large quantities of air, the abdomen is prodigiously enlarged and the shape of a barrel. Pressure symptoms, as labored respiration, cyanosis and tachycardia appear due to the upward displacement of the diaphragm. When the exit of air is accompanied by the escape of liquid content from the gastro-intestinal tract, the usual signs of a perforative peritonitis supervene.

The barrel shaped abdomen in the presence of comparative comfort, the lack of vomiting, obstipation and pain, and the persistence of peristaltic sounds, serve to differentiate it from intestinal obstruction. The entire abdomen appears radiolucent, except for the solid structures, which stand out in bold relief. If intestinal obstruction, on the other hand, the x-ray shows the distention to be of the intestinal loops rather than the intraperitoneal air.

UROLOGY

Edwin Davis(6) has reported five cases of massive secondary post-prostatectomy hemorrhage successfully controlled by direct fulgeration. After aspirating the intravesical clots, surprisingly good visibility of definite bleeding points was obtained. Profuse secondary hemorrhage after prostatectomy had previously been the gravest complication and occurred in about 2.5 per cent of cases. The fulgeration treatment of these hemorrhages should tend toward a further lowering of the mortality rate of prostatectomy.

Of late years there has been a growing tendency toward the removal of prostatic obstruction by a transurethral resection with a special instrument. At the present time this question is very much debated by urologists. In the November issue of the *"Journal of Urology"* there is a long symposium on this subject. McCarthy(7) stated that he cannot find a single logical defect in the rationale of this method. It meets the most exacting requirements of visualization, excision and hemostasis. In 150 patients Collins(8) did not have an operative death, and 85 per cent of the patients were relieved of their symptoms and residual urine for an average of four years. Kirwin(9) argued for the proper selection of cases. Alcock(10) wrote that, so far as immediate results were concerned, he was perfectly satisfied with the method. He had not used it long enough to know the ultimate results. Bumpus(11) reported excellent results in cases on whom this was performed over five years ago. Day(12) stated that future results should be carefully compiled before making a conclusion.

Boyd(13) discusses the procedure of nephrostomy to divert the urine flow from the bladder as a preliminary procedure in preparing a patient for cystectomy or in cases of urinary obstruction. There have been, in the past, two essential things lacking to make nephrostomy as popular an operation as he thinks it should be, namely, satisfactory tube and urinary container arrangements and an operative technic which avoided hemorrhage and urinary leakage about the tube. He describes ways of overcoming these objections. He considers this operation preferable to ureteral transplantation.

EXTREMITIES

Gibbon and Landis(14) have found that immersing the forearms of normal subjects in warm water (43-45°C.) produced vasodilatation in the lower extremities. The immersion of one forearm or one leg in warm water produced vasodilatation in the other extremities. This type of vasodilatation apparently depended upon the return of warmed blood from the immersed extremity. Three cases illustrating vasodilator responses in certain types of vascular disorders of the extremities are reported. With this method of producing vasodilatation, if the digital temperature rises above 32°C., organic occlusion of the vessels supplying the extremity may be excluded.

The specific relationship of streptococci to the type of joint disease, commonly designated as atrophic-deformans, has been strongly emphasized by recent research. Hadjopoulos and Burbank(15), working with rabbits, have produced this type of arthritis by injections of streptococci. By incubating the whole joint, they were able to demonstrate these infecting organisms in practically all lesions associated with chronic atrophic arthropathies. Streptococci were found in every part of the synovial tissues where pathological changes could be detected. No streptococci could be found in compact bone, yet the spread of infection in bone tissue could be traced step to step through its medullary and Haversian vascular supply. In the avascular cartilage, the spread of streptococci was through infected bone tissue and synovial infiltration. Normal joints were subjected to the same procedure with uniformly negative findings. Muscles and tendons about the arthritic joints were also found to contain streptococci. These organisms were also found in the liver and kidneys, indicating that chronic rheumatoid arthritis is fundamentally a systemic disease, and it explains the transient septicaemias that occur intermittently in the course of the infection.

The trauma of injection treatment may activate a resting infection in varicose veins. The source of infection lies in teeth, tonsils, pelvic infections, acute respiratory infections, or varicose ulcer. Phlebitis in a varicose vein is a definite contraindication to injection treatment. DeTakats(16) advises a careful study to determine the presence of a resting infection before injecting varicose veins. The history of a previous phlebitis should force one to look for local symptoms. Tender, thickened veins, palpable phleboliths, but particularly a rise of surface temperature should suggest resting infection.

To activate such resting infection, provocative measures, such as vein puncture, diathermy, or Roentgen rays may be employed. The obtained reaction is measured in four hours by the rise in skin temperature, preferably with a skin thermometer.

When resting infection is diagnosed, injections should not be undertaken. Obvious force of injection should be eliminated. Repeated small doses of Roentgen-ray, mild protein therapy and adequate support of the limb may clear up this infection. Three months later the provocative test may become negative, at which time injection treatment is permissible. The infection, however, may not clear up for years, particularly if the site of infection is in the pelvis.

MISCELLANEOUS

While not a surgical subject, I am including the following because of its possible aid in the controlling of post-operative pain or the pain of late carcinoma. After reading a report of the Committee of the League of Nations in which a new drug called dilaudid was recommended as the most promising of the newer substitutes for morphine, Alvarez(17) has been investigating this drug. It is made from morphine, hydrochloride with the help of a catalytic agent which produces hydration. The chemical name for dilaudid is dihydromorphinone hydrochloride. It has five times the analygesic effect of morphine and has not the constipating effect. It does not have the euphoric effect of morphine and no cases of habit formation have resulted from its use. However, it is no better than morphine in the production of nausea and emesis. It is not so likely to spoil the appetite and in some cases actually improves it. The drug does not seem to be dangerous and Alvarez has not found any report of injury due to a marked idiosyncrasy. It does not well relieve pains of central origin. Alvarez thinks it will very soon be on the market.

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WIRING AN ANEURYSM OF THE THORACIC AORTA*

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Since the discovery of the Spirochaeta pallida by Shaudin in 1905, development of the Wassermann test for syphilis and a rational treatment for the disease, the instance of aneurysm of the thoracic aorta has been greatly decreased. It has long been recognized that medical treatment for a developed aneurysm, even modern therapy, is useless. A patient suffering from aneurysm of the thoracic aorta is doomed, unless the growth of the aneurysm can be checked and the contained blood made to clot and organize. There are a very few authentic cases in literature where this result has occurred spontaneously without external interference.

In 1864 Moore first attempted to create this desired condition of the aneurysmal sac by inserting from 33 to 200 feet of fine silver wire into the sac. Various other attempts were made to promote clotting by inserting into the aneurysmal sac, bits of metal of various kinds, watch springs and other foreign bodies. These attempts were invariably followed by fatal results as these small bodies would find their way into the general circulation. Corrodi improved Moore's method in 1879 by inserting 40 cm. of wire into the sac and then connecting the extremity with the positive pole of a battery, the negative being applied in the vicinity of the aneurysm. This method was called Filigalvanopuncture or the Moore-Corrodi Method of wiring an aneurysm. While the results of this method have not been brilliant, still it has been until recently the accepted surgical method of treating these conditions. Hunner (Baltimore) compiled cases reported and treated by this method up to 1900, combining statistics of the thoracic and abdominal cases. He collected 14 cases in which Moore's method of wiring, alone, had been adopted. Of these 14 cases 8 were thoracic and 6 abdominal. Two only of the abdominal cases were apparently cured (14%). He collected 23 cases which had been treated by the combined method, 17 thoracic and 6 abdominal. Four of these (17%) recovered, including 3 thoracic and 1 abdominal.

Keen collected a series of 41 cases treated by the combined method with 8 apparent recoveries (2 abdominal and 6 thoracic). A personal communication from Dr. J. M. T. Finney of Johns-Hopkins gives the following statistical data: "I have done this (wiring the aneurysm) now about thirty-five times. Of this number, I should say about half have been definitely improved; the other half I could see little or no difference; in one or two cases only had there been reason to think that death had been hastened. In perhaps a half dozen cases (I am speaking from memory, I have not the figures before me) the patient has been practically, if not entirely relieved of all symptoms, and the progress of the aneurysm has been arrested. The chief objections to these methods are the pressure erosion caused in the sac wall by a wire with too much spring in it and the degenerating effect upon the wall by the electric current."

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

Apparently a distinctive improvement has been made in the procedure recently (1930) by the experimental work of F. C. Lee and Wm. M. Millar in the Hunterian Laboratories of Johns Hopkins Medical School. Quoting verbatum from their report:

"Purpose—1. What metal causes the greatest amount of blood clotting in viva?

"2. To note the difference between results in the so-called wiring with electrolysis and non-electrolyc methods commonly employed in treatment of aneurysms.

"Zinc containing less than 0.1% lead, 0.01% iron and 0.002% cadmium was found to always produce clotting and to be the best metal for the purpose. It was seen that the Moore-Corrodi method as practiced surgically with a current of 50 m.a. is apparently detrimental in both its immediate and its later effects to the strength of the vessel wall. Evidence points to the fact that such a procedure tends to weaken rather than strengthen the vessel wall."

The following case report is that of a patient of Dr. W. A. Gerrie, who assisted in the procedure:

The patient, J. R., a male, aged 47, consulted Dr. Gerrie on January 9, 1931, complaining of (1) a pulsating mass in the upper part of the chest, (2) husky voice, (3) palpation, (4) pains in the upper chest, neck and left arm. Patient admits having had a chancre 26 years ago for which he received local treatment. Has been a healthy man until 3 years ago when he noticed pains in the upper part of his chest. His Wassermann at that time was 4-plus. Was told that he had an enlargement of the heart. Following the development of pains he noticed shortness of breath and palpitation. During the past three years has had 50-60 mercury rubs and intra-muscular injections of bismuth. No treatment since March, 1930. In May, 1930, noticed a small lump over the sternum. In October, 1930, the mass increased rapidly to the present size. His voice has become husky and pains have developed in the neck and left arm. He was worked out thoroughly at the largest of our middle-west clinics and operation refused. Examination revealed a large pulsating mass eroding through the upper sterum. X-ray confirmed the diagnosis of large sacculated aneurysm of the arch of the aorta. The condition was clearly explained to the patient who elected to have the aneurysm wired.

The first attempt to wire the aneurysm was made January 13, 1931. The attempt failed because the silver wire buckled in the canula and it was impossible to pass it into the sac. Our problem was placed before my esteemed professor, Dr. J. M. T. Finney of Baltimore, who requested Dr. Lee to send me the wire they had recently developed in the Hunterian Laboratory. Through the courtesy of Dr. Lee I received the zinc wire and wired the aneurysm on January 23, 1931. Some difficulty was experienced in entering the sac and getting a free flow of blood, possibly due to partial clotting in the sac. Ten feet of wire was passed into the sac and external end pushed into the muscle and skin closed. The patient was immediately relieved of all symptoms and left the hospital one week later with slight expansive pulsation of the mass.

On February 7, 1931, he developed an acute cough, temp. 103, W. B. C. 20,000, and was returned to the hospital with apparent cardiac embarrassment. On February 10, 1931, he developed an acute swelling in the left neck with decrease in size of substernal mass and died at 8 p. m. Autopsy revealed free blood in the left neck from rupture, an enormous aneurysmal sac arising from the ascending aorta and filled with a well organized clot about the wire. One loop of the wire had extended into the aorta for approximately ¼ inch and the clot extended from this down to the aortic valve—the evident cause of death.

COMMENT

This procedure is applicable only in the sacculated type of aneurysm. The technique of the operation is not especially difficult and though there is always a possibility of the wire passing into the main channel of the aorta, the percentage of such accidents is not high and in consideration of all factors in these cases I believe that this procedure is not only justifiable but definitely indicated in selected cases. Dr. Finney covers this condition with following well-chosen words: "To be perfectly frank, with aneurysm of the aorta, one is dealing with an otherwise fatal condition, ligation is out of the question, medical treatment is of little avail, and the only thing one has left is wiring. In a word, it seems to me that, given a sacculated aneurysm, it is well worth while to give the patient the benefit of the wiring operation, because otherwise he has nothing to look forward to but certain fatal ending. If it does him no good, there is little chance of doing him harm, and one is giving the patient, so far as I know, the only chance that there is."

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DISCUSSION

J. E. SUMMERS, M. D. (Omaha): I think Dr. Emmert is to be congratulated upon his efforts to help this individual.

When I was asked to talk on this subject, my mind went back to the work of Dr. Hare, the therapeutist who recently died. In 1912, he reported twenty-two cases operated upon by himself. There is always the question as to what eminent men think about the value of a given operation, therefore, I consulted the literature.

The Doctor has an illustration supposed to show how the wired aneurysm would look. I will show you by a skiagram how it does look two years after operation, the patient doing nicely. Some of the best men say they have known people to live for years after such an operation. One man, however, lived thirteen years with a large aneurysm of the aorta. The question is, "Do these sufferers live longer with than without the operation?" There is a case from California where a woman lived twenty years after this operation. In cases reported it relieves the pain, which is something worth while.

Speaking of the end of the wire going beyond the aneurysm brings out the point that this operation must be done only in cases of purely saccular aneurysm. It is told of in an article by Hare where the wire went through the aortic valve and stuck in a leaflet of the mitral valve. Hare also calls particular attention to the fact that when the wire is introduced, one must be sure to put the positive pole into the aneurysm. If the negative pole goes in, it breaks up the clots and brings about death. Dr. Emmert spoke of this, but did not emphasize it.

I have had no personal experience with the operation. I have known of it for a long while. They used to introduce into the sac, nails, horse hair and different things as the Doctor mentioned. The reason practically all were failures before the years of antisepsis was the fact that the patient died from false technique, independent of the type of the operation. I never saw an aortic aneurysm operated upon, but I can conceive of cases where it is perfectly justifiable to wire, if the patient is suffering a great deal of pain; if not, the question becomes one of doubt.

J. A. BURFORD, M. D., SUPT. (Beatrice): I had a little personal experience in 1914. The patient was a man about forty, whom I had under observation for about two years. This man developed a lump under the clavical, which gradually developed until about four inches in diameter.

During this time, the clavical and three ribs were absorbed by pressure from the aneurysm. It was finally decided to attempt to wire this aneurysm and we passed about thirty feet of silver wire into it through a canula. This wire was then attached to the positive pole of a galvanic battery and the current turned on.

We got a firm clot and complete absence of pulsation in the aneurysm. The man was relieved of his distressing symptoms and made comfortable but at the expiration of four weeks he died very suddenly. Evidently a portion of the clot had passed into the circulation.

This case has not previously been reported.

MAX EMMERT, M. D. (closing): The first thing we expected to find was a lung invasion. The autopsy did not show it. He had a white count of 20,000. Why I do not know, possibly protein absorption from escaped blood in the tissues.

There are some points I want to emphasize. The technique in these cases is not difficult. You naturally visualize the possibility of the wire perforating the sac. That is true of certain kinds of wire. The danger of a stiff wire is the pressure of the wire against the wall of the sac, producing a necrosis. We tested how the wire would behave. With the least little pressure, we found the wire would curl. That is true during the operation. The wire starts to curl in the sac itself.

I think electricity will be done away with, because it has a deleterious effect upon the wall of the sac.

In my opinion the greatest advance in the treatment of these cases during the past fifty years has been the introduction of this special zinc wire by Lee and Millar, which obviates the necessity of the use of electricity.

The following pathological data of the aneurysmal clot is taken from personal communications from Dr. Ferdinant C. Lee of Johns-Hopkins Medical School, who examined this tissue.

After photographing the heart and aneurysmal clot containing the wire, Dr. Lee cut sections of the clot containing the fire, dissolved out the wire and made histological sections of the remaining clot. His examinations revealed that there were no fibroblasts in the entire clot, that the only structure which gives body to the clot is apparently fibrin with the mass of the clot made up of red cells.

Upon receipt of the above information, I wrote to Dr. Lee inquiring whether or not the absence of fibroblasts precluded the possibility of organization and permanent benefit to the patient. The following is his reply: "The fibroblasts have to grow into it (the clot) from the wall of the artery where there are fibroblasts to start with. Unless sections are taken from that region, it would be difficult to eliminate them entirely. Certainly the sections which were sent you did not show any fibroblasts as far as I could see, and I believe that the clot was held together by fibrin, and that the only possibility of the entire clot organizing would be from fibroblasts which gradually organized it, starting from its base, because the endothelial lining of aneurysms is not always complete, and the presence of a clot in the lumen of the vessel might destroy endothelium and give an avenue for the entrance of fibroblasts. At all events, even though the clot does not become completely organized, it certainly fills up the lumen and serves almost as well as if it were a fibrous mass of tissue."

CONSERVATIVE TREATMENT OF CHOLECYSTITIS

J. Tate Mason and J. M. Blackford, Seattle (*Journal A. M. A.*, Sept. 10, 1932), report the results of a study which has confirmed their impression that in well defined chronic cholecystitis not relieved by medical treatment the operative results are most satisfactory. However, contrary to usual surgical advice, chronic cholecystitis may, in approximately one-third of the patients, be successfully treated along medical lines. The risk of developing a surgical emergency or calamity while under medical treatment is not greater than is the risk in the best elective gallbladder surgery. Patients who have allowed their gallbladder symptoms to go on for a number of years until their gastric acids have become low or absent, with definite and permanent pathologic process of the liver and biliary ducts, cannot expect as complete relief from cholecystectomy as if they had accepted immediate operation. Hence the authors believe emphatically that when medical management fails to relieve promptly then operation should be urged on the patient. They emphasize the fact that patients with acute cholecystitis, empyema, jaundice or carcinoma were not included in their study.

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

J. STANLEY WELCH, M. D., Chairman,
Lincoln, Nebr.

In Three Parts—PART II

III. EXECUTIVE SECRETARY

Any consideration of such an officer in the Nebraska State Medical Association at once encounters certain fundamental details:

A. Why should we make a change, and why should your committee study the Executive Secretary Problem?

B. If such a change is advisable, can the Nebraska State Medical Association's budget be balanced without increased cost to the individual member?

C. How should the assembling of tasks to be transferred from paid part-time officers to the office of an Executive Secretary be done, without interruption or loss in the efficiency of present system? Would not a survey of the successful organization now functioning in fourteen sister states be helpful in formulating a program suitable to Nebraska's needs and our ability to carry on?

A. WHY SHOULD WE MAKE A CHANGE?

Your committee on Medical Education has come into a fuller appreciation of this Executive Secretary need, because of certain tasks which you in the past have assigned us. And now with the desire to help the House of Delegates and the Council in their consideration of the advisability of making this change in the Nebraska State Medical Association, we have assembled much information from The American Medical Association (Olin West, Morris Fishbein, and Mr. Sanger) and from the officers and secretaries of the fourteen sister states already using the full-time system.

WHY A FULL-TIME EXECUTIVE SECRETARY?

Example. It is the example set by the American Medical Association some years ago, with much profit in general efficiency.

Centralization and Less Duplication. It is now applied by many state medical associations with equally good results. It is without exception their experience that through this plan of centralization of all activities, that there is less duplication of effort and expense.

Efficiency in Committees. An executive secretary is an ex-officio member of all committees, and by his continuous activity he helps all committees to carry their work farther.

Publicity. There is better contact with the public in lay, legal. and legislative ways (Minnesota and Colorado as nearby examples).

Membership Increases. Colorado says, "We believe we can trace to this system of ours a marked increase in attendance at all county society meetings and at our state meetings. Besides this, our membership has grown. In a nut shell, we now get things done instead of merely talking about them."

These are but a few of the tangible results, and Indiana says many of the best results of such a State Medical Headquarters are the intangible benefits.

Another state says: "The important point is that a full-time system represents a progressive step wholly aside from the advantage of business-like finances. The facts and figures are the easiest to explain to the membership, yet of less end importance to the individual doctor."

Meyerging, of Minnesota, says: "The medical profession today is in a position where organization is their only salvation if they desire to retain any of their independence and individuality."

Olin West says: "I cannot recall that any constituent state medical association that has employed a full-time secretary has ever abandoned the plan."

WHAT THEN WOULD BE THE DUTIES OF A FULL-TIME SECRETARY IN NEBRASKA?

1. Administrative: The executive secretary takes care of all the administrative details of the association, working through the officers or executive committee and under the control of the council. He would make personal visits to the weak societies, bolster them up and help maintain a high standard of activity in the larger societies.

(a) By talks.

(b) By monthly or quarterly bulletins to county societies.

(c) By keeping complete card index record of every member and every M. D. in the state. Irregularities and evils could be quickly checked and helpful activities noted and passed on.

2. Medical Defense. He would keep all records of defense cases and cooperate with his committee on Medical Defense. Investigation on threatened cases could be made in conjunction with circuit calls on county societies.

3. Treasurer's Duties, such as collecting and recording and accounting, could be executed for the treasurer-elect to O.K.

4. State Medical Journal. In Nebraska, as in Indiana, the Journal could be edited in a remote city with the closest affiliation and cooperation. If, and when, a change is needed, then, as in Colorado and several other states, it could be advantageously linked up with the secretary's organization.

5. Legislation. Who could do more in legislative matters, because of conversant knowledge with all affairs of the society, than the executive secretary?

6. Publicity. A central management of all affairs provides Minnesota, Indiana, Colorado, and other states the best possible set-up to direct publicity. Opinions on medical matters have gone through a clearing house bureau before released. These officers are looked to as authoritative, and correctly so.

7. Committees: Standing and special committees are aided and guided in their activities as the mind of the officers and council directs, with accumulated experience and secretarial efficiency.

8. State Board of Medical Examiners are aided by such an office.

9. Meetings of County Medical Societies could be more efficiently conducted.

10. An executive secretary is a director for the annual state medical association meeting.

11. Commercial Exhibits are solicited and handled. In some states a successful solicitor for journal advertising is maintained on a commission basis.

12. Special Medical Advice for Health Meetings of Many Kinds. The secretary is a contact man for the association,

With Chamber of Commerce or Industrial and Civic relations;

With Tuberculosis Association;

With Cancer control work;

With Radio programs;

With Auxiliary organization, etc.

B. RELATIVE SIZE OF NEBRASKA TO OTHER STATE MEDICAL ASSOCIATIONS

Many of the states served by a full-time secretary are larger than Nebraska and have greater incomes. Three are about the same size or smaller. One state association larger than Nebraska (1800 members) is operating on $5.00 fees per member, $2.00 of which goes to the journal, and with total receipts less than ours. Details of the budgets of any of these states are at hand for further investigation, if the house of delegates and council so desire.

OUR SALARY BUDGET

A review of the 1931 published financial statement of the Nebraska State Medical Association shows the following salaries:

(The figures given below are copied from the Nebraska State Medical Journal, issue of March, 1932, page 121.)

General Secretary	$ 600.00
	1,300.00
Secretary of Public Activities Committee	1,000.00
Secretary of Defense Committee	600.00
Editor's salary	1,200.00
Total	$4,700.00
If for the present you leave the editorship as it is and deduct this $1,200.00 from the total, you have as paid salaries alone	$3,500.00

EXECUTIVE SECRETARY'S SALARY

We believe a saving of $500.00 can be made on this item for the first year. No doubt an efficient secretary will want more salary as his work grows. This margin of $500.00 will safely take care of this item for his second year of tenure.

EARNINGS OF STATE ASSOCIATION INCREASE UNDER EXECUTIVE SECRETARY MANAGEMENT

The history of every one of the fourteen different states shows the gross income from all activities has increased. Colorado increased her dues $5.00 and thus netted them approximately $5,000.00 on their one thousand membership. Their gross increase the first year, however, was $16,000.00, or $11,000.00 creditable to new methods.

Quoting: "The placing of our society on a business-like basis became a distinct financial advantage, for although the total dues of the society were increased only about $5,000.00 per year, the total income of the society was increased approximately $16.000.00. Whether these financial figures would be similar in the case of your society, probably no one can predict. But I believe that the experience of the majority of the societies having within the last ten years installed such a system would tend to indicate success similar to ours."

LOSS IN MEMBERSHIP

The largest decrease in membership noted where dues were increased was fifty, and this more than returned in every state by the second year. (In above figures, in Nebraska, no increase in dues is contemplated.)

In making comparisons with Colorado it is fair also to make comparisons as to the possibilities. Colorado has but fifteen hundred doctors, and one thousand in the state association, where Nebraska has over nineteen hundred doctors and therefore a much larger chance to increase her membership.

Oregon, likewise, has but twelve hundred and seventy-five doctors in the state, with a membership of six hundred and eighty-five. Here, again, Nebraska has a superior chance to succeed.

EXPENSE BUDGET

Further, the 1931 Nebraska State Medical Financial Report shows on disbursements certain definite items fairly assignable to the budget of expense for a full time executive secretary.

Public Activities	$1,500.00
Office expense of general secretary	589.00
Expense secretary on Legal Defense	50.00
or a total of	$2,139.00

All of which could be set up as operative expense for a single executive secretary, possibly with some saving to the state association.

It is to be noted that many of the miscellaneous and journal expenses have not been shown in the above accounting. These have a rather definite purpose and because they would approximate the same in either a single full time or the present multiple part-time secretary service, they have not been injected into this plan.

C. ASSEMBLING OF TASKS FROM PART TIME PAID SECRETARIES TO AN EXECUTIVE SECRETARY

To assemble all of the tasks now assigned to the various part-time paid secretaries under one executive secretary should be carefully done. If one of the present secretaries should be selected to assume full time responsibility, there would be less chance for interruption and set-back in the work. If an entirely new secretary is employed, and particularly if a layman, it has been suggested by the present executive secretaries of several of the fourteen different sister states, that the new encumbent be given a reasonable time to organize his work. In communicating with several of these secretaries, they have kindly tendered their offices and their services, as a place for the Nebraska secretary to further his organization set-up. Our committee suggests that if, or when, a change is made, that this officer may be given sixty or ninety days, during which time the present part-time secretaries continue to function in their offices, and during which time the new executive can familiarize himself with the work in these part-time offices as well as to develop his general organization.

(To be continued)

TRAUMATIC RUPTURE OF THE INTESTINE IN A HERNIAL SAC*

C. H. WATERS, B. Sc., M. D., F. A. C. S.,
Omaha, Nebraska

Mr. P. J. L., age 67, farmer:

On the morning of July 8, 1930, this patient was kicked by his horse in the upper left thigh. In spite of local pain he kept at his work for several hours, during which interval he began to suffer increasingly from abdominal discomfort and this accompanied with repeated vomiting.

He was seen by his physician several hours later, and, because of increasing pain and abdominal distension, he was finally persuaded that his condition demanded surgical attention. He was admitted to the hospital thirteen hours after his injury with a temperature of 100°, pulse 110, and a white blood count of 18,000. The abdomen was markedly distended and tympanitic throughout with obliteration of liver dulness, and with marked generalized tenderness and rigidity. In the femoral region of the left thigh was a bruised area with outline of the horse's shoe visible, the upper part showing at the level of Poupart's ligament. A diagnosis of ruptured intestine was made although the contusion was well below the abdomen. Rather cryptic but explained by the fact that he had an indirect inguinal hernia on the left side. At the time of his injury he was wearing a truss of the usual type with a hard rubber "button". Seeing the kick coming the involuntary tension of the abdominal muscles would force a length of the intestine into the sac under the "button" which in the next instant received the impact of the upper part of the horse's shoe. The bowel, ruptured and collapsed, probably at once dropped back into the abdominal cavity.

Spinal anaesthesia was used and the abdomen opened in the mid-line. The abdomen seemed literally filled with fecal material. A four inch length of badly contused ileum was found in the pelvis, and a half inch perforation in its middle with active fecal leakage. The rent in the bowel was closed by suture, the bulk of fecal material aspirated from the peritoneal cavity and a drain placed in the cul-de-sac.

Drainage persisted actively for ten days and shortly he was dismissed from the hospital with a small sinus, having had a remarkably smooth convalescence considering the number of hours elapsing between injury and operation.

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*From the Department of Surgery, University of Nebraska College of Medicine.

A GOOD WORD FOR THE GENERAL PRACTITIONER

I have no illusions about the shortcomings of the man in general practice; no illusions about the advance our profession has made since the day when a physician's daily list included a case of measles, an obstetric delivery in the home, the snipping of a pair of tonsils, and an insurance examination. I know how cheap sentimentality enshrined the general practitioner of the melodrama who spent considerable of his time pushing his way bravely through snowstorms to cottage doors, operated in the kitchen by candle light, and watched all night beside the child's bed, contemplatively stroking his long beard. That type has gone just as surely as has the surgeon who operated in his frock coat and eagerly watched for laudable pus.

The type of general practitioner to whom I refer is a thoroughly prepared man, who is by temperament and education fitted for the job of taking care of sick people. He must invariably have two qualifications: competence and honesty. He must be intelligent and exceedingly well prepared to make him competent in the broad field of his work, to make the diagnosis, to know what to do therapeutically. He must be able to recognize conditions that are beyond his knowledge and skill, and to be honest, in both the popular and the scientific sense, so that under such conditions he will call assistance or refer his patient to a specialist. He is not going to fit glasses, take an obstetric case or do an appendectomy unless he is practicing in a community where no one is more competent than he for the service. He might open a boil on a patient's hand; but he would recognize a deeper infection in the hand, realize its dangers, and refer his patient to a surgeon if one were available.

In the early part of his practice he will put in practical use the urinalysis, the sputum examination, the blood work he did as student or intern. Later on this will take too much time and he will make arrangements with some convenient laboratory or employ a part-time technician. Basal metabolism tests, electrocardiograms and the more complex, technical and time-taking laboratory work he will probably find to be more satisfactorily done outside his office.

He will be found regularly at medical meetings but will not seek a place on the program or in the discussion until occasion arises when some observations in the course of his experience will be of pertinent value. He will keep up with new books, journals and reports, and will accept as a part of his armamentarium the facts of proved worth elicited by the research men and laboratory workers. Mackenzie has pointed the way by which this man may do his bit of research and make his contribution to medical knowledge.

There is some danger, after his practice has become well established and profitable, that he will be invited to join a clinic group and become their internist. He knows he is not a specialist in internal medicine, and he realzes that it would be a gesture and a yielding to popular appraisals for him to announce himself as a specialist.

I have no quarrel with the more or less popular group clinics. They are of value in diagnosticating and treating the occasional puzzling case, particularly in communities where hospitals and well equipped laboratories are not available. However, in my opinion, they and other forms of medical corporations have no place in any program for the reduction of the cost of medical care. They certainly cannot supplant the physician I have in mind, who, under a conservative estimate, in his own modestly equipped office and laboratory would be able to diagnose and treat scientifically and satisfactorily at least 80 per cent of the cases that come to him.

The significant application of this factor in our discussion to the hospital problem is that, if the profession and the public can be made to realize that such a man as I describe deserves their commendation and support, and that he is serving his profession just as admirably as any specialist, more and more desirable men will enter this field, will be found adequate to the home care of many patients now hospitalized, and will leave the hospitals much freer for the service they are peculiarly adapted to give.—A. T. Holbrook, Federation Bulletin.

TULAREMIA FROM INGESTION OF INSUFFICIENTLY COOKED RABBIT

Monroe Crawford, Orangeburg, S. C., (*Journal A. M. A.*, Oct. 29, 1932), reports four cases of tularemia that are interesting because of the mode of infection. The path of entrance was through the oral cavity and the author believes it was due in part to ingestion of insufficiently cooked rabbit and to contaminated hands. There were no ulcers on the hands or glandular enlargement below the clavicle.

She was just temperamental—90 per cent temper and 10 per cent mental.—Florida Times-Union.

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IMPORTANT ANNOUNCEMENT

After the Journal *had gone to press the annual meeting of the councilors of the Nebraska State Medical Association was held in Lincoln, and we are privileged unofficially to state that radical economies were inaugurated and that the membership dues were reduced to five dollars. This is, of course, subject to the approval of the house of delegates whose action is thought to be a foregone conclusion.*

ANNUAL DUES

If your annual dues amounting to $5.00 has not been paid you are delinquent and not entitled to Medical Defense nor the *Journal* after February 1st. Medical Defense is available only to those in good standing. Please send $5.00 plus your county society dues to your county secretary at once.

PAPERS FOR ANNUAL PROGRAM

If you wish to read a paper before the annual meeting May 23-25, please send your name and title to Dr. R. B. Adams, Secretary, Center McKinley Building, Lincoln, Nebr.

LIFE

Life is like a deck of cards—
When you're in love, it's hearts,
When you're engaged, it's diamonds,
When you're married, it's clubs,
And when you're dead, it's spades.

GROUP COMMUNITY MEDICAL SERVICE

We refuse to get excited about the Report of the Committee on the Costs of Medical Care which is quite contrary to the reactions of most of our contemporaries in state medical journalism.

The majority Report suggests an ideal toward which we should work and to that extent is as harmless as the much discussed Wickersham Report which has a semi-official governmental status that this report does not have.

In this work-a-day world very few problems can be worked out on an ideal basis. Nothing sounds pleasanter than the suggestion that medical service should be furnished by organized groups of physicians organized around a hospital for home, office and hospital care. Carrying out the proposition might present many difficulties.

The majority report suggests group payment basis through the use of insurance. Let us follow that to its legitimate conclusion: Assuming that a group of people anywhere should elect to get medical care on an insurance basis and that the group organization is functioning well at a certain time—What will happen if the group is overcome by economic stress such as affects the average Nebraska farmer today? Suppose the group were formed around an industry and the industry went on the rocks financially?

The history of the Roanoke Rapids Community Medical Service fairly illustrates the problem. This service was formed around a new and at one time prosperous milling town and was considered an immense success for a time. During the depression readjustments have had to be made and still further readjustment may become necessary and it is conceivable that the entire structure may fall due to the economic stress.

The Committee further suggests supporting group community service through the use of taxation. or by a combination of taxation and insurance. Taxation would at once mean state medicine with all that that implies and in this country we are trying to keep away from state medicine, which, however, seems insiduously creeping upon us.

We have for a number of years had a pet idea that in an agricultural section, anyway, there should be a legislative enactment providing for the creation of community hospital districts, in a manner similar to community drainage or irrigation districts, whereby the people if they so elected, could tax themselves for the erection and maintenance of community hospitals, open to all physicians. The burden of hospitals should not rest on the community physicians, but on the people of the community. If, as time goes on, hospitalization will more and more become the method of caring for the sick, then some such method must be worked out, to provide the necessary facilities.

AN EVALUATION OF THE REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

The medical profession in the United States, and society in general, have been favored by a careful fact-finding survey of the adequacy of practice as it exists today. After five years of investigation the American people have had handed to them enough high explosive, if all recommendations were carried out at once, to cause a revolution and to upset all the traditions of private practice. It is not at all likely that these recommendations will be largely or in the whole adopted in the near future. The report is entirely unofficial, and carries no executive or legislative force. The facts are in the main acceptable. Some parts of the survey are significant but lack comprehensive vision. The recommendations are open to question, but undoubtedly they will have an important influence on the trend of the social aspects of medicine. It is mainly on the recommendations that the report is open to criticism.

Not all physicians have the time or opportunity to read in full the voluminous reports of the committee. Nor should they be expected to peruse the entire batch of abstracts of the different studies. But every practitioner of medicine who has a vision beyond his daily routine should read carefully the final report. "Medical Care for the American People." No similar study has yet been made. The object is commendable and no doubt some good will come of it. It will help in the thinking of all people interested.

It is significant to note the personnel of the committee making the report. In all there are fifty people. Twenty-four have M. D. degrees and sixteen are physicians of note who are engaged in private practice. Among those in private practice nine, or a majority, do not sign the majority report but submit with a good deal of emphasis a minority report. The signers of the majority report are scholars in research, writers, teachers, and public spirited individuals. Only a few (nine), but a majority of the practitioners, dissent. It is theory against practical minds. Which should propose the remedy: the theorists or the practitioners?

The medical profession should be careful in making sweeping condemnation. Over-conservatism will destroy an opportunity of real service: a participation in the plans to better things. It should temper the thrills of the Utopians to the ills of every day life. A lesson should be taken from the history of a similar movement in Great Britain. The British medical profession was dealt a sudden and terrific blow when The Medical Insurance Act was past by the House of Commons. Organized medicine has suffered ever since and today has not regained its former position of influence. No medical society anywhere had such time honored traditions and so many satisfied conservatives. No sudden changes are at all likely to occur in America, but we may establish confidence in political and social circles that these propositions will at least have respectful and sympathetic consideration.

Most private practitioners will accept the minority report. Organized medicine will debate the subject pro and con. The success or failure of the future is largely in its hands.

No one will be so foolish as to claim that the practice of medicine is not changing. In over a quarter of a century the writer has seen many new discoveries, growth in hospitalization, the spread of the influence of public health, the increase of medical facilities to large classes of self supporting citizens, the custodial and medical care of the insane, the tuberculous, the indigent. The expense and direction of vast medical enterprises has been assumed by federal, state, and municipal governments. The Indian wards of the government, the territories, the dependencies and possessions beyond the mainland, have far-flung medical service. The rural practitioners are no longer isolated, for they have increased their contacts by the development of communication, highways and rapid transportation. Medical centers are being decentralized into county seat towns and smaller cities. The rural doctors have easier opportunities for counsel. Even in the cities the doctors are associated either informally or actually into groups for the benefits of clinical facilities.

The people want the advantages of modern scientific medicine and they intend to have it. It is for the medical profession to work out a plan so they may have it at a fair cost. As a group they can pay for it; as individuals they cannot. Our civilization has not reached the stage where all people are forehanded and have enough to pay for the medical program on the present basis.

It is to be hoped that the Public Health Service of the United States will continue in an advisory capacity rather than to attempt giving remedial care. This is her tradition and only in a few instances has the department broken away from it. There is need of a service of this type, to establish standards, to correlate and to settle controversy where authority or special interests may conflict.

To state that each community will be districted as in our public school system and that medical care will be distributed from one center called a hospital instead of a school house is dreaming, and the comparison may be likened to the mixture of metaphors. The further development of the cooperation of various organizations into health councils is commendable. Plans and policies, and possibly administration may be supplied by laymen, but the medical care of patients must be given by the physician, who is the expert with the technical knowledge and skill. Common planning is necessary, to adjust our medical and other health facilities.

Much of the furore over the report is caused by journalistic distortion. It is a great topic, enjoyed by head-line hunters. The cauldron of fire must be stirred by appeal to emotion and to prejudice. It is usual to hurl at the head of the medical professional the epithets of "stand patters," "selfish," "standing on its own light." Journalism likes the extreme or the bizarre; it likes to march out the boggie men in a dimly lighted field, or to get up a scene like a fight at the old Irish Fair.

If medicine becomes more centralized and even accepts pay from a common purse, there is no likelihood that the systems of Russia, Germany, or Great Britain will be adopted in whole. The basic form of our social and political life insures a different administration. Mistakes of other countries should be avoided. Surely we will profit by the experience of Europe. The American people will insist on maintaining the close personal relationship between patient and doctor.

That there is a problem, we must all agree. Social customs are not statis. Changes are going on. Leaders we have and always there will be leaders. It is far better to assume the leadership at once, than to leave it, by standing aloof, to the politicians, the special interests, or the exploiters. The profession could be enmeshed in slavery that would take a hundred years for emancipation. Our editorials should be carefully prepared, and if the mountain has labored and brought forth a mouse, innuendos, or damnation by faint praise, will only arouse prejudice. Encouragement and cooperation should be the object of editorial messages.

This is peculiarly a doctor's problem. We believe in freedom of our citizens and also in freedom for the medical profession. Our vocation is a profession which exists for the people it serves. This ideal lifts it above the guilds and trades, and business. It is unnecessary to borrow from big business except that which is needed to supply modern methods of practice. Medical hierachy, competing centers, and broken personal relationship, stifle advancement; but they are unnecessary if the profession is alive to progress as it is being made.

—E. W. Rowe, Lincoln.

CHILD HEALTH AND PROTECTION IN NEBRASKA

Nebraska has lagged behind most of the states in cooperating with the White House Conference on Child Welfare and Protection. This is so not because of any lack of desire on the part of the medical profession. It is the policy of the national organization to place at the head of the various state organizations the governor and the state officials who head the agencies that are directly concerned with child health and welfare. It has not been possible to secure such cooperation in Nebraska with the result that the state lags behind most states of the union in following up the work as outlined by the national organization.

The Woman's Voters League of Nebraska has sponsored the work and an organization has been effected that will start functioning in the near future. Doctors and nurses are particularly interested in that phase of the program which has to do with public health, the handicapped child and with medical service. An immense amount of valuable data was assembled by the national organization but there remains for the Nebraska section the task of assembling data that concerns our own state. We want to know what is being done for the health and welfare of the children of Nebraska and to ascertain these facts the committee will look to the secretaries of the county medical societies. With this information in hand an educational campaign will be inaugurated that will be directed not alone to the lay public but to the doctors and nurses as well. It will be an educational venture free from the ballyhoo that too often accompanies such enterprises. If the committee has its way there will be no baby clinics, no "one come all and help yourself" program offered to the public at the expense of the doctors and nurses.

While the task is the direct responsibility of the pediatricians and obstetricians of the state there will be need for the cooperation of the medical and nursing profession as a whole if the largest good is to be derived and it is the earnest wish of the committee to have such cooperation.

Following is the list of chairmen of the respective committees. The personnel of the committees has not as yet been completed.

Chairman of Medical Section—Dr. Palmer Findley, Omaha.
Secretary of Medical Section—Dr. W. O. Colburn, Lincoln.
Chairman of Program Committe for Public Meeting—Dr. H. S. Morgan, Lincoln.
Chairman of Medical Survey Relating to Pediatrics—Dr. Clyde Moore, Omaha.
Chairman of Medical Survey Relating to Obstetrics—Dr. H. S. Morgan, Lincoln.
Chairman of The Handicapped Child—Dr. Floyd Clark, Omaha.
Sub-Chairmen—
Medical Care of Children—Dr. H. B. Hamilton, Omaha.
Orthopedics—Dr. J. E. M. Thompson, Lincoln.
Dentistry—Dr. L. T. Hunt, Lincoln.
School Nursing—Mrs. Fred Whitcomb, Omaha.
Social Service—Miss Perrine, Omaha.
Nursing—Mrs. Gladys Smitts, Lincoln.
Secretary—Dr. Herman Jahr, Omaha.

—The Committee.

PRESIDENT CAREY'S SUMMARIZATION OF OUR PROBLEMS

Dr. E. H. Carey, President of the American Medical Association, in an address before the Annual Conference of Secretaries and Editors of Constituent State Medical Associations, propounded the following questions:

"1. Should we or should we not advocate as a basic principle the Iowa plan of dealing with indigency?

"2. Should we or should we not develop a comprehensive inclusive county medical society plan of creating a budgeting system whereby the catastrophic needs of the people can be met at a cost within the reach of the families who are unfortunately sick?

"3. Should we or should we not condemn all hospital insurance schemes for the care of the sick? Or, is it possible to discriminate and say to hospitals that no plan will be recognized as worthy, which includes the physician's services but such hospitals are to be opened to all members of the county medical society, preserving free choice of medical service on the part of the patient.

"4. Should we or should we not bring all the pressure we have to bear upon the December Congress to establish a different policy toward the hospitalization of nonservice disabled veterans?

"5. Should we or should we not demand the repeal of the 202-10 amendment which has opened the government hospitals to all nonservice disabled veterans?

"6. Should we or should we not strive both to limit the number of new medical graduates and to develop the field of immunization and preventive medicine for private practitioners?

"7. Should we or should we not fight with all the strength of the body medical in its individual and collective entity, the trend to state medicine in all of its ramifications which threatens to destroy our professional integrity and material remuneration and to retard the progress of our science?

"I raise these questions so that through the wisdom of this body we may be able to crystallize our position and concertedly get into action.

"The medical profession treasures its ancient home of Hellenic origin; its straight lines are redolent of beauty; none of us complains of its architecture but, as time goes by, like all homes it needs repolishing. Its superstructure stands upon a foundation which time has scarcely marred. The builders of today, like the builders of yesterday, are trying to keep this foundation sound and secure. The portals of this home have always been flung ajar to extend gracious hospitality to all who need its beneficient bounty. We are proud to claim it our habitat, and we should protect its beauty, culture and integrity with our life blood."

OUTSTANDING PIONEER OBSTETRIC EXPERIENCES—PATHETIC, HUMOROUS

OBSTETRICIANS WITHOUT FORCEPS

I began practice in 1876 and it was five years before I saw an obstetric forcep. Fifty-two years ago I was called to attend a young lady in her first confinement. I found her having regular pains and her mother and mother-in-law at her side. Examining, I found a slightly contracted pelvis, the os fully dilated and a left occipito-posterior position.

I felt that it would take some time and very hard contractions to force the head through the straight and was content to wait until toward morning, when I began to realize that the two old ladies were becoming exasperated—and so was I, when they suggested that we call old Doctor B., who had been their soul's salvation in their own confinements, from a nearby town. He arrived about sunrise and after salutations he inquired about the trouble. After getting the history of the case he said to me, "Young man, if it is a head presentation, never fear". We went into the house where he greeted the two old ladies, "Howdy Jane", "Howdy Lucy." Immediately the atmosphere seemed to take on a halo of brightness as expressed in the faces of the two old ladies. After the examination by the old doctor and the assurance given that everything was alright and would be over soon, the atmosphere assumed a different aspect and I soon saw that I was to play "second fiddle." Time went on and on, the woman having the hardest pains I ever witnessed, and still no baby came. Although playing "second fiddle", I felt the case rightfully mine and after waiting until three o'clock in the afternoon, I mustered up courage to tell the old doctor and the old ladies who by this time had got over laughing and had developed sober and disappointed looks, that "This is my case and I am going to town and get a pair of forceps and deliver this woman or quit the case."

"Alright," said the old doctor, "but I think it will be born before you get back." I drove to town, nine miles, and borrowed a forcep, the only one I knew of in the county, and returned in three hours to find no further progress had been made. Immersing the forceps in warm water and making a free application of lard I offered the instrument to the old doctor to make the application. He said, "I have been practicing thirty-five years and have never yet applied a forcep." To which I replied, "Neither have I, but I can and I will"—and in twenty minutes delivered the baby into the hands of one of the old ladies. By this time there was a different turn of affairs in my favor.

From that time to this I have never allowed a woman to suffer unduly when it was possible to relieve her by instrumentation, not allowing myself, however, to be in too great haste to get things over until action seemed called for. Mother and child lived.

Think of the crude preparation of the person and the instrument, and why? Because we did not know better. How different today! If we were to do a thing like that now, if we did not condemn ourselves, our patients and friends would. My fee was $15.00.

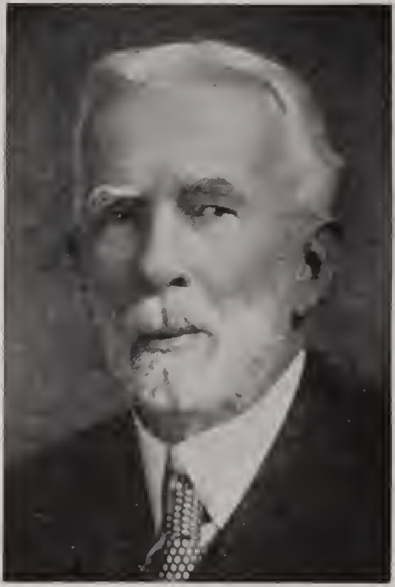
—J. A. Waggener, Humboldt.

If young men were required to learn to make a living before they were permitted to make love, there would be lot less talk about birth control.

OMAHA-DOUGLAS COUNTY MEDICAL SOCIETY HONORS DR. W. F. MILROY

Dr. William Forsyth Milroy, Omaha physician for almost half a century, was honored *in absentia* at a banquet of the Omaha-Douglas County Medical Society at the Fontenelle hotel, December 13, last. A death in the immediate family called him from the city, precluding attendance. The good wishes of the membership of the society were conveyed to him by a committee on his return to Omaha.

Dr. Milroy was actively engaged in practice in Omaha from 1884 to 1925. Soon after his arrival in Omaha he was recognized as a man of outstanding attainments. He was professor of clinical medicine in the Omaha Medical College and in its successor, the Nebraska University College of Medicine, from 1884 to 1925. He was the first president of the Omaha-Douglas County Medical Society, 1890; president Missouri Valley Medical Society, 1918; president Nebraska State Medical Association, 1915-17; vice president, American Therapeutic Society, 1923; and is a Fellow of the American College of Physicians. He has been active in Welfare work and has been president of the Nebraska Children's Home Society. He has contributed much to medical literature, and, notably, first described, in 1892, a variety of hereditary edema, now known as "Milroy's Disease", so named by the great Osler.



DR. W. F. MILROY

Of late years he has devoted himself to the medical directorship of a life insurance company.

William Forsyth Milroy was born in York, New York, December 28, 1855; in adolescence attended the Geneseo State Normal School, the University of Rochester. Johns Hopkins University and was graduated from the College of Physicians and Surgeons of Columbia University in 1883. Following graduation he served two years as interne in hospitals in New York City before coming to Omaha.

Dr. and Mrs. Milroy have two daughters.

ALLERGIC MIGRAINE

Albert H. Rowe, Oakland, Calif. (*Journal A. M. A.*, Sept. 10, 1932). calls attention to the fact that food allergy as a frequent cause of migraine has been demonstrated. Of 130 patients treated by him, good results with the elimination of allergenic foods occurred in 87 per cent of the 109 patients who gave good cooperation. The author's elimination diets, modified by positive skin reactions or a history of idiosyncrasies to specific foods, were effective in the determination and control of the food allergy.

WHAT ABOUT THE POSTAL MUTUAL BENEFIT CORPORATION?

Dr. James R. Kalar, of Anselmo, Nebraska, who died on September 17, 1932, was the holder of a certificate of insurance in the amount of six thousand dollars ($6,000.00) in the Postal Mutual Benefit Corp., of Phoenix, Arizona.

This insurance was taken out under a group plan for physicians. The corporation has refused to pay the death loss, we are told. Under the plan of insurance referred to, whenever a death occurred, all members were sent notices giving the name and address of the deceased, and demanding remittances of $5.50 from each member to cover the amount to be paid to the beneficiary of the policy and expenses in connection therewith.

This *Journal* is requested to ask physicians who may be insured in the above named Postal Mutual Benefit Corporation to inform us whether notice of assessment was received and remittances made in the case of Dr. James R. Kalar. This we cheerfully do and answers may be sent to the editorial office at Madison, Nebr.

DERMATOLOGIC HINT NO. XII

Soothe the acute and stimulate the chronic! Not a few cases are over treated.

—**Donald J. Wilson, Omaha.**

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. XII

Every woman approaching the menopause, at the menopause or following the menopause, should have a pelvic examination, both bimanual and speculum, twice a year. When first seen cervical pathology should be corrected. It is only by some such method as this, that we can wage more successfully our fight for early recognition of cancer.

—**Harold S. Morgan, Lincoln.**

TUBERCULOSIS HINT NO. IV

It is not possible to run away from tuberculosis, either by going to some other climate, or by refusing to admit its presence.

—**Miles J. Breuer, Lincoln.**

MEDICO-LEGAL DISABILITIES VI

In the consideration of an accidental injury of a claimant where no restrictions are made, which is the result of an unusual, unforeseen unintended force, "the result" is the deciding element, and it makes no difference whether the cause was intentional or not, or whether the cause was unforseen, unintended or unusual.

—**Czar Johnson, Lincoln.**

EDITORIAL PARAGRAPHS

The present legislature is without a medical member.

The Norfolk Lutheran Hospital has been accorded recognition by the American College of Surgeons as a standardized hospital.

The *Medical Repository* was the first medical journal published in this country. It was a quarterly and was first issued in 1797. It continued publication until 1824.

New Ads this month: Dr. H. G. Morris, offering a hospital unit; Cook County Graduate School, of Medicine; Chicago, Eye, Ear, Nose and Throat Hospital; Dr. J. E. M. Thomson, professional notice.

Organization of a Lincoln Health Council, the primary object of which is to unite in an advisory group all organizations interested in the promotion of health activities, is announced. It is hoped the work can be standardized and duplication of effort avoided.

At least one Nebraska county has run out of funds to care for paupers and indigents and in consequence rejected about one thousand dollars worth of bills for medical care and asked the claimants to sue the county. This is another angle of the problem.

The editor will hate himself for a full month because of a transposition of the legends to the cuts in the Dr. A. F. Tyler article on Electrocoagulation of Vascular Tumors in the January *Journal*. The blame must be shared jointly by the printer and the editor—the former for the transposition and the latter for overlooking it.

The Omaha Mid-West Clinical Society has been organized with a membership limited to one hundred for the purpose of sponsoring annually a post graduate clinical assembly. The first assembly will probably be held in early fall. Dr. B. B. Davis is president; Dr. Adolph Sachs, vice president; Dr. J. D. McCarthy, secretary and director of clinics; Dr. W. P. Wherry, comptroller.

The "Grain of Wheat" lamp, the smallest lamp in commercial use today, consumes only one-fifth of one watt. With a consumption so small it could burn all day long for a year at a cost of only 10c, based on a country-wide average rate per kilowatt hour, these tiny "specks" of light are used in doctor's instruments for exploring the insides of human beings, such as the sinus regions of the head.

In the death December 10, of Dr. William S. Thayer of Baltimore one more of the great men of American Medicine has passed on. He followed Osler as professor of Medicine at Johns Hopkins Medical School and lately was professor emeritus at the same school. He was President of the American Medical Association in 1928 and 1929. He was one of the most beloved men in the profession. His age was about sixty-eight years.

We are offering in this number the first of a series of Outstanding Pioneer Obstetric Experiences contributed by some of the older physicians of the state. We believe the physician, besides being a scientific person, is a human being with a taste for mental recreation in some of the lighter affairs of the profession. The articles will also have a historical value that will be appreciated, as they portray in a general way the conditions that the early pioneer doctor had to meet.

During the war of 1812 a frightful epidemic of pneumonia swept over the northeastern states fatal to soldier and civilian alike in proportion to about one out of eight persons. At that time bleeding, blisters, calomel, antimony and jalap were the standard remedies. One physician, Yates, became a dissenter by treating his cases with an emetic, physic, laudanum for pain and hot tea to promote sweating, with favorable results and scandalized the profession by his rashness.

From the Report of the Committee on the Costs of Medical Care we gather that the average net income of physicians for the year 1929 was $5,300 and that half of the physicians in this country were earning $3,800 or less. To fully evaluate the latter statement one must remember that a large number, perhaps approaching one half of the physicians are of mediocre ability, misfits in life, or not adapted to the profession in which they find themselves. Remembering this the statement above seems less tragic.

Shoe dye poisoning is discussed in the December *International Medical Digest*. It can not be traced to shoe factories, but is somewhat common after repairing and redying shoes if the shoes are worn within 24 hours. Nitrobenzene and analine are used to dye shoes. If the shoes are worn within 24 hours after dying the wearer may experience severe symptoms and even death. The toxic material is absorbed through the intact skin. Cyanosis, heart block, arhythmias, bleeding from the urinary tract. low blood pressure, nausea and dizziness occur.

In a personal letter from Dr. Ray Lyman Wilbur, president of the late Committee on the Cost of Medical care he says: Twenty-six studies. a factual summary. and a final report of recommendations, including those of a minority group, are now available. There may be a wide range of opinion as to the wisdom and practicability of the recommendations. The facts, though, are obvious and the need of doing something constructive is a pressing one. Here in the United States we are now in a position to make local experiments based upon these careful studies and recommendations.

A small portable "electric palate", or Electrynx, that tastes and indicates on a meter the acidity of fruit, vegetables and liquids has been developed by R. C. Hitchcok, electronic engineer of the Westinghouse Electric and Manufacturing Company. Other tests made with the Electrynx were the acid condition of the human mouth, palm of the hand, the hair and other parts of the body. It is predicted that with further development of this new apparatus, the days of sticking out your tongue to the medical doctor is past for in the future all that will be necessary for the doctor to do is to place the prongs of this instrument in the patient's mouth and the acid content of his tongue will be recorded on a meter for the physician.

Dr. L. L. Lumsden of the United States Public Health Service after making a public health survey of Omaha, pointed out places where duplication of effort might be avoided to the benefit of the service, suggested the need of more money for health service and suggested that supervisory power over all public health activities should be vested in a "Douglas county hospital board," non-salaried, to be made up as follows: A county commissioner; the mayor of another city or councilman; deans of the University of Nebraska and Creighton university colleges of medicine; two members of the Douglas County Medical society; one member of the Douglas County Dental society; one chamber of commerce representative, preferably a lawyer; one executive of the Council of Social Agencies.

The National Institute of Health, under the control of the Surgeon General of the United States Public Health Service, was created in 1930 as a result of legislation fathered by Jos. E. Ransdell, then a United States Senator from Louisiana. It is an enlargement of the old Hygienic Laboratory, and is the scientific research center of the Public Health Service. Its function is to ascertain the cause, prevention and cure of diseases affecting human beings. The act provided for an appropriation of $750,000, which is now being expended in the construction of two splendid buildings in Washington. It also authorized the Secretary of the Treasury to accept gifts for research in problems relating to the health of man. Although the financial support for research work has been comparatively small in the past, government scientists have made extremely valuable discoveries concerning such diseases as malaria, pellagra, hookworm. tularaemia (rabbit fever), undulant fever, psittacosis (parrot fever), typhus, Rocky Mountain spotted fever, and many others.

Bransford Lewis and Grayson Carroll in advance copies of an article on "Prostatic Resection —Without the Moonlight and Roses", give the following clean cut conclusions: Whatever of merit lies behand the several instruments and methods for prostatic rection, their cause will not be promoted by wild assertions. When taken in connection with actual experiences lately revealed, they remind one of the old witticism, "The operation was a success but the patient died." As a matter of fact, the operation (endoscopic resection) is a success; and we are glad to subscribe ourselves unreservedly in its favor—in appropriate cases. Mechanically and technically the instruments, the electric units and operative details have been worked out marvelously well, but there are certain features, certain problems yet to be solved; the millennium of prostatic surgery has not yet been reached. From reports of actual experience by capable operators in various parts of the country it may be deduced that: 1. It is not only erroneous but dangerously misleading to teach that prostatic resection is "minor surgery." 2. It has not reached a status of perfection that justifies the oft repeated assertion that it will supplant prostatectomy. 3. It devolves on the operator to draw the line of demarcation between the fit and the unfit for resection, maintaining an open mind to the advantages and disadvantages, as well as the fitness of each operative method.

NECROLOGY

Paul H. Ludginton, Princeton, N. J., (retired); native of Cincinnati, Ohio; University of Pennsylvania Medical School, 1897; son of the late Dr. and Mrs. Horace Ludington, sometime Omaha residents; resident of Omaha in his early youth and early manhood and practitioner in Omaha from date of graduation until a few years ago when he moved to Princeton, N. J.; from 1901 to 1910 a member of the faculty of the University of Nebraska College of Medicine; a world wide traveller; died at Tucson, Arizona, December 19, 1932, of progressive general arthritis, aged about sixty years.

Joseph Cerny, Wilbur, Nebr.; Jenner Medical College, 1899; in practice at Wilbur for upward of twenty-five years; member, Nebraska State Medical Association; died December 27, 1932, aged sixty-seven years.

Edwin W. Shearburn, Fairbury, Nebr.; native of Carlinville, Ill.; Chicago Homeopathic Medical College, 1902; in practice at Haddam, Kansas, from date of graduation until 1925; practitioner at Fairbury since 1925; died suddenly December 11, 1932, aged seventy years. He is survived by a widow and a son, Edwin, Jr., student at the Nebraska University College of Medicine. Dr. A. B. Shearburn, Walnut, Ill., is a brother.

Jacob F. Brendel, Murray, Nebr.; Lincoln Medical College, 1903; member, Nebraska State Medical Association; one of a group of two generations of physicians; died following several operations within six weeks, December 31, 1932, aged about fifty-six years. A widow and son survive.

Edward Bates, Lincoln, Nebr.; Chicago Medical College, 1884; died September 6, 1932, aged eighty-two years. (This names does not appear in the A. M. A. Directory. Authority, J. A. M. A.)

Charles A. Stevens, Chicago; native of Leigh, Neb.; Northwestern University Medical School, Chicago, 1899; surgeon; died January 3, 1933, aged about sixty years. Burial at Albion, Nebr. A widow and son survive.

Albert C. Armitage, Haigler, Neb.; Keokuk Medical College, 1891; practitioner in Iowa from date of graduation to 1921, when he located in Culbertson and four years later moved to Haigler; died January 3, 1933, aged about seventy years. A widow, daughter and son, Dr. A. C. Armitage, Jr., Kinsley, Kansas, survive. Dr. G. I. Armitage, Murray, Iowa, is a brother.

Frank L. King, Omaha; Pulte Medical College, Cincinnati, 1888; former Omaha physician, but more recently in practice at Minneapolis, and Petersburg, N. D.; died in Omaha, after an illness of several years, January 12, 1933, aged about seventy years.

INACTIVE DUTY MEDICAL TRAINING

From February 12 to 25, 1933, there will be a training period for Medical Department Reserve Officers of the Army and Navy, made possible at the University of Washington Medical School, St. Louis, Missouri, by the courtesy and enthusiasm of the faculty of this school in cooperation with the Medical Departments of the Army and Navy.

While this is classed as an "inactive duty period" and is without pay or allowances to the participants. the time spent is recognized for the same credits as though it were an "active duty" period. The exceptional clinical advantages of this great medical center, combined with the advanced military and naval training, make possible a very profitable two weeks. The training is open to all Medical Department officers of the Army and Navy reserves, or the National Guard.

The program of the clinics will be under the direct supervision of the faculty of the Washington University. The military instruction, which for the first time includes instruction with reference to the medical service of the Navy, will be under the direct supervision of Colonel George A. Skinner, Medical Corps, United States Army, Corps Area Surgeon, assisted by Lieutenant Commander Reuben H. Hunt, Medical Corps, United States Navy.

Applications for attendance should be forwarded to the Surgeon, Seventh Corps Area, Omaha, Nebraska.

TUBERCULOSIS ABSTRACTS

Poverty and tuberculosis go hand in hand; so runs the doctrine preached for a score of years. Some even regard the tuberculosis death rate as a rough barometer reflecting the fluctuations in the economic state of the people. For more than three years hard times have blighted the country; few have escaped its evil effects. Yet the tuberculosis mortality rate continues to decline. How can this paradox be explained? No authoritative answer is available and none would be so rash as to predict a continuation of the downward trend. But a consideration of some of the influences that undoubtedly play a part in this phenomenon may suggest what steps in the future must be taken to sustain the present favorable tread.

EFFECT OF DEPRESSION ON TUBERCULOSIS

The tuberculosis death rate for 1930 in the United States reached the low point of 71.5 per hundred thousand population. Unofficial but reliable estimates for 1931 show a rate of approximately 67 per hundred thousand. The Metropolitan Life Insurance Company calculated that at the end of the third quarter of 1932, the tuberculosis death rate had declined 6.9 per cent as compared with the like period of 1931.

Deaths from tuberculosis come mostly from that group who have had the disease for some time. Among the tuberculous population at any given time there are always some whose fate hangs precariously in the balance. A slight downward push on the scale such as hunger or worry, is likely to bring the struggle to a premature end. Apparently there are not enough such "critical" cases of tuberculosis among the "new-poor" to affect appreciably the mortality rate.

We are not certain, however, that hard times are not increasing the morbidity of the disease. Assuming the average expectancy of the consumptive to be five years, the present effects of deprivation, even though temporary, may shorten that expectancy. Furthermore, our present understanding of the manner in which tuberculosis begins and develops, justifies us in assuming that environmental influences often determine whether or not a child with early lesions will later develop the destructive adult type. And many children now heavily infected but not yet labeled "tuberculous" are suffering deprivation. Thus the toll of the enemy may be so "absorbed" in the years to come as to show no definite "hump" in the mortality curve.

Aside from these probabilities why has the mortality rate not yet reflected the effect of poverty? While poverty and tuberculosis are closely related, there is nothing about poverty of itself that favors the disease. The sole, direct cause of tuberculosis is the tubercle bacillus. Without infection by that specific germ, even Job's turkey could not possibly develop phthisis. But the by-products of poverty are the active allies of the enemy.

One such by-product is faulty nutrition. We have not thus far permitted this by-product to overwhelm us. Luxuries, comforts, and even self-respect may have to be sacrificed by many people, but old-fashioned starvation for the sheer want of bread is a disgrace we are determined not to suffer. Nor is the nutritional quality of food being sacrificed to any great extent. During the war, the hunger of European peoples was appeased by filling their bellies with food substitutes of poor nutritional value. Not so in the present crisis. True, the consumption of milk has decreased somewhat, but on the other hand, the cheap price of butter has enlarged sales of that article at the expense of butter substitutes. Meats, vegetables, and fruits have dropped to a price level that discourages the competition of foods of lesser nutritional value. Allowing for the concessions many families are making, we still may safely assume that no widespread harm has as yet been wrought because of poor nutrition.

Another by-product of poverty is the crowding together of families, which in turn favors the ready transfer of the tubercle bacillus from the sick to the well. Domiciliary crowding has not yet been severe. The inhuman huddling of several families in quarters designed for one, as was so common during the war, has been mitigated by lowered rentals. Incidentally, the experience in German cities in the post-war period indicates that food shortage rather than crowding is the significant factor in causing an increase of the rate. During the blockade when food supplies were cut off, the tuberculosis death rate rose to unprecedented heights. When the blockade was lifted this rate declined precipitately to its former level, though the housing shortage continued as before.

A third by-product of poverty is shattered family morale. "What's the use!" is the attitude of the discouraged family. Slovenly habits creep in. Why wash the dishes carefully? Why not spit on the floor? Why keep the appointment with the doctor? Cheerlessness and numbers subtract their toll from one's capital of resistance. Deplorable situations are evident, but in the aggregate we have kept our courage to the sticking point, and the pessimism that now presides in many households has not yet become chronic.

MOMENTUM OF THE MOVEMENT

An important factor responsible for the continued decline of tuberculosis deaths is the cumulative effect of the tuberculosis movement. For a score of years, educational propaganda has been rolling up its force; it momentum has been slackeneded only slightly by the present pot holes in the highway of progress. Knowledge acquired in the past has not lost its power; our respect for tuberculosis has not lessened; habits and practices acquired in the good days continue to function in the bad.

But perhaps the most pertinent answer to the question as to why the death rate has not taken an upward turn is to be found in the tuberculosis fighting machinery that is now functioning. It is, of course, inadequate, but in no previous depression have we been so well equipped. Some eighty thousand patients are at the moment occupying sanatorium beds, which means not only that eighty thousands persons are being given their chance, but also that as many potential foci of infection are removed from the susceptible community. More thousands, graduates from tuberculosis institutions, are exerting their wholesome influence wherever they may be. The sanatorium is doing "business as usual," in fact, almost 1,000 new beds have been added (in the U. S. A.) during the past year. Nor has there been an appreciable lessening of clinic and medical activities. Greater skill and precision in diagnosis and treatment are practiced by the doctor than ever before. Health department budgets in several places have been curtailed, but without seriously lessening the efficiency of the service rendered. Public health nurses' salaries have suffered reduction but not the quality of their work. Tuberculosis associations have trimmed their sails, but the educational and publicity work goes on unabated. Research has not stopped, and demonstrations gaily carry on.

CONTROL MACHINERY WORKS

The machinery has clicked on despite the depression. The fact that this "variable" has not changed (except for the better) whereas the other traditional variable, namely, the economic factor, has changed, and that, in the face of this, the tuberculosis rate has not increased, is indirect but persuasive proof of the efficacy of our present method of attacking tuberculosis.

Epidemiology teaches that human skill apparently avails little during the height of an epidemic. But when the foci of infection begin to decrease in number, organized effort bears fruit and accelerates the decline. When the disease foci are finally reduced to a minimum number, the epidemic is "under control." Has the age-old epidemic of tuberculosis reached the point where the active cases are so few that the disease may be "controlled" regardless of unfavorable circumstances?

Whatever the answer,—the danger of over-confidence must be avoided. Human nature, notoriously fitful and fickle, must be reckoned with. Experience shows that a populace plagued by a disease enemy may be roused to such a pitch as to depress the danger to a vanishing point. When the threat lessens, interest lags, vigilance relaxes, and then the enemy sweeps once more into the unprotected ranks. For this reason the history of small-pox since Jenner's time is one of sporadic recurrences alternating with periods of quiescene, but never of complete conquest.

The anti-tuberculosis crusading spirit of bygone days drew its power chiefly from deep emotion. As the stimulating reminders of the disease have grown fewer, interest has lessened. It is necessary in these days to replace the old fire with a persistence born of intellectual understanding. For this, leadership of the medical profession is essential. The fact that the traditional and powerful contributing causes of tuberculosis may now be, and are presumably being, "neutralized" by medical skill in diagnosis and treatment, is a tribute to scientific medicine and its practitioners.

There are a number of people on the ether who should be under it.—Atlantic Constitution.

THE SOCIETIES

The doctors and wives of the **Dodge County Medical Society** held a Christmas party at the Hotel Pathfinder, December 23rd. The Ladies' Auxiliary had charge of the table decorations and Christmas gifts.

Following the dinner, Dr. J. J. Hompes, Lincoln, Nebr., showed pictures of life in India and told of his trip there the past year.

Dr. Clayton Andrews also of Lincoln gave a talk on "Diseases of the Thyroid Gland" which was discussed at length.

At the business meeting which followed the following officers were elected:

President—D. M. Bloch, Arlington.
Vice President—Guy Seward, Fremont.
Secretary-Treasurer—Andrew Harvey, Fremont.
Delegate—A. E. Buchanan. Fremont.

Due to conditions and collections it was suggested, and duly moved and carried, to pay dues of all members in good standing at this time for 1933. Dues to be paid from funds now in county society treasury. Check sent in to R. B. Adams, January 4, 1933, amount $200.00.

—Andrew Harvey, Sec.-Treas.

The Annual meeting of the **Richardson County Medical Society** was held at Falls City, December 20, following a dinner served by St. Mary's Guild.

Election of officers for the coming year for the medical association was held and the following chosen: Dr. Wm. Shepherd, Rulo, president; Dr. J. M. Greene, Falls City, vice president; Dr. C. L. Hustead, Falls City, secretary and treasurer.

Two papers were read during the business meeting. Members of the Auxiliary attended this meeting. Dr. J. A. Waggener of Humboldt read a paper, "A Plea for More Strict Marriage Law"; while Dr. Hustead read a paper on "Cancer of the Skin," which was illustrated with slides.

The members of the **Platte County Medical Society** held their annual meeting and election of officers in the form of a seven o'clock dinner at Hotel Evans, December 14. Following the dinner the following officers were elected for the coming year: Dr. W. R. Neumarker, president; Dr. Harry Elston, of Humphrey, vice president, and Dr. E. E. Koebbe, secretary-treasurer. Dr. Koebbe was also elected delegate to the state medical association meeting.

Dr. J. P. Feese will head the **Adams County Medical Society** during the coming year, succeeding Dr. A. J. Boren. New officers were elected at a recent meeting.

Dr. C. R. Spicer is the new vice president and Dr. D. W. Kingsley will serve as secretary for a second term. Dr. G. E. Charlton was elected delegate to the state convention at Lincoln in the spring and Dr. Boren alternate.

The **Phelps County Medical Association** met at Holdrege on December 31, 1932, and elected officers for the year 1933. The present officers were reelected, who are namely, Dr. Kenneth C. Baker, president; Dr. J. L. Magill, vice president, and Dr. Theodore A. Peterson, secretary-treasurer.

The **Otoe County Medical Society** met January 9, at Hotel Grand, Nebraska City, for a dinner and scientific program. The doctors' wives and several guests from Omaha were present.

Following the dinner a short joint session was held for the purpose of forming a Woman's Auxiliary to the society. Mrs. D. D. Stonecypher was elected temporary chairman and the group will meet again February 13th to elect officers. The auxiliary is planning to serve a buffet dinner for the society prior to each meeting at one of the physician's residence.

A short report was presented by the Indigent committee relative to setting a time of meeting with the Otoe County commissioners and action delayed to allow Dr. Zimmerer, chairman, time for agreeing on a date with the commissioners.

Dr. Lynn Hall of Omaha gave an excellent paper on "Precordial Pain," stressing the point that many patients in this enlightened age come to us complaining of chest pains referable to the heart area, fearing heart trouble the cause. Dr. Hall classified these patients in three groups:

1. Precordial pain from various pleuritic irritations, intercostal neuralgias and myalgias.
2. The pseudo anginas of neurologic origin.
3. The true anginas of cardiac origin.

Dr. G. P. Pratt of Omaha gave an informal but excellent talk on "Pneumonia," speaking especially of the type presenting during the recent "flu" epidemic. A review of digitalis therapy in pneumonia was given. Two schools exist at this time, those favoring digitalis during the course of pneumonia and those who do not. The stand between these two seems more logical, viz.: Digitalis therapy is indicated in those cases requiring digitalization in any disease affecting the heart, as auricular flutter, auricular fibrillation and congestive heart failure. One should add that digitalis is definitely contraindicated in diphtheria.

An interesting discussion ensued concerning both papers and defnite clinical value received by the members present.

Election of officers: President, Dr. D. D. Stonecypher; vice president, Dr. T. L. Weekes; secretary-treasurer, Dr. R. H. Loder; delegate, Dr. J. P. Gilligan.

—R. H. Loder, Sec.

The **Gage County Medical Society** met January 10 in the Y. W. C. A. rooms, Beatrice, and enjoyed a dinner, at the close of which the following officers were elected:

President—Dr. W. A. Rush.
Vice president—Dr. Amesbury Lee.
Secretary-treasurer—Dr. F. W. Buckley.
Censor—Dr. John R. Moritz.

The program was in charge of Drs. J. C. Waddell and John R. Moritz of this city and Dr. Schoengerdt of Cortland.

HUMAN INTEREST TALES

Dr. and Mrs. E. F. Zoerb, Scottsbluff, spent the holidays in Iowa.

Dr. A. J. Mullman, for several years at Talmadge, has located at Adel, Iowa.

Dr. George A. Morrison, Bradshaw, was reported seriously ill in December.

Dr. Perry Allerton, Tilden, is doing postgraduate work in surgery in Chicago.

Dr. and Mrs. W. F. Callfas, Omaha, have returned from a motor trip to Florida.

Dr. E. J. Mitchell and daughter, Scottsbluff, visited at Columbia, Mo., in December.

Dr. F. W. Heagey has been elected president of the Omaha Council of Social Agencies.

Dr. Ewald Olsen, of Red Oak, Iowa, visited his parents at Wahoo during the holidays.

Dr. L. E. Stearns, Kearney, was reported ill in an Omaha hospital, during the holidays.

Dr. R. A. Frary, Stanton, was recently named county commander of the Stanton county legion.

Dr. P. A. DeOgney, Milford, has been reappointed a member of the medical state examining board.

Sneak thieves on a recent Sunday visited the York clinic and took away with them all the narcotics.

Dr. R. D. Schrock, Omaha, spoke before the Fremont Rotary club on correcting deformities of children.

Dr. H. F. Gerald recently spoke on the "History of Drugs," before the Pre-Medic club of the Municipal university.

Dr. C. T. Gritzka, Talmadge, who suffered a fracture of the leg in mid-September, is just now able to get about.

Dr. Gerald Henning, Norfolk, spoke on "The Child and Its Habits" before the local Parent-Teacher association, recently.

Dr. and Mrs. H. C. Wengert, Grand Island, were in an auto wreck recently, fortunately without sustaining serious injuries.

The installation of deep x-ray therapy equipment in the Evangelical Covenant hospital is announced by Dr. A. P. Overgaard.

Dr. M. M. Sullivan, Spaulding, has been elected president of the Spaulding City Bank, in place of his father recently deceased.

An auto stolen from Dr. H. B. Boyden, Grand Island, recently was recovered, but a case of surgical instruments was missing.

Dr. Thomas Orr, Kansas City, Mo., read a paper on "Intestinal Obstruction" before the Lancaster County Medical society last month.

Dr. E. P. Bachle, for the past five years in practice at Marysville, Kan., has returned to Liberty where formerly he was in practice for 15 years.

Dr. T. M. Barber, of the Norfolk State Hospital, spoke on "Mentalities" before the young people's Fellowship club of the Episcopal church, recently.

Dr. H. L. Palmateer, Madison, has gone to New York City to take special training in eye, ear, nose and throat work. He was accompanied by his family.

Dr. and Mrs. W. J. Douglas spent the Christmas holidays with their daughter at Evanston, Ill., and incidentally made the acquaintance of a new granddaughter.

A Creighton Medical College fraternity is about to undertake an experiment in balanced dieting by their own scientific calculation under the direction of Dr. Victor E. Levine.

Dr. F. E. Manning, Custer, S. D., visited at Schuyler and David City recently and returned to his home, accompanied by his wife, who had spent six weeks in an Omaha hospital.

Dr. Lucien Stark, his wife and his wife's mother were severely injured in a rear end collision on highway No. 20, after dark, during holiday week, and the doctor's car was completely wrecked.

Dr. R. D. Schrock, Omaha, has been appointed head of the department of orthopedic surgery at the University of Nebraska College of Medicine, succeeding Dr. J. P. Lord, who has been made chairman emeritus.

Dr. John A. Tamisiea, Omaha, has been awarded the decoration of the Order of the Purple Heart. He was attached to a British army medical unitl and was wounded while active in the battle zone of Vimy Ridge.

REACTION TIME OF NORMAL PUPIL

H. S. Gradle and Walter Ackerman, Chicago (*Journal A. M. A.*, Oct. 15, 1932), report that in normal young blue-eyed persons, the pupil reacts in accordance with the following terms: (a) On illuminating the eye, there is a latent period of 0.1875 second. (b) This is followed by a primary contraction of the pupil lasting 0.4365 second at the rate of 5.48 mm. per second. (c) Then there comes a secondary contraction of the pupil lasting 0.3125 second at the rate of 1.34 mm. per second. (d) When the illumination is removed, the pupil starts to dilate at the rate of 0.95 mm. per second.

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VARICOSITIES AND OTHER ABNORMAL CIRCULATORY CONDITIONS OF THE LOWER EXTREMITIES*

FREDERICK L. SMITH, M. D.,
Section on Postoperative Care, The Mayo Clinic,
Rochester, Minnesota.

Any condition which produces a break in the equilibrium or balance of the vascular system, whether it be in the arterial, venous or lymphatic components, results in physiologic changes which have a direct bearing on the physical and economic welfare of the individual. Unfortunately, it is during the most lucrative period of one's earning ability that such conditions arise. As the laboring classes are mostly affected, it should be a physician's endeavor to return the workers to productivity in the shortest time possible. Before considering the more common conditions, I shall briefly mention some uncommon affections of the vascular system of the extremities which may be associated, and in some instances have a direct bearing on the symptoms.

Of the affections involving the arterial system, thrombo-angiitis obliterans (Buerger's disease) usually occurs among men between the ages of twenty-five and fifty years. In Brown and Al-

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*Read before the Seventh Councilor District Medical Society, Superior, Nebraska, October 27, 1932.

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len's proved group of 150 cases, the youngest patient was aged seventeen years and the oldest sixty-four. The affection is diagnosed by the loss of pulsation and intermittent pain in the arteries of the involved limbs, fatigue after short walks, intermittent pain in arches of the feet and in the calves, changes in temperature and color, and a history of superficial phlebitis.

The frequent occurrence of venous thrombosis in polycythemia vera is readily recognized by the sluggish circulation, the high viscosity, and the increased volume of circulating blood. The peripheral arteries are narrowed by organic change resulting in anoxemia and sluggish flow.

Arteriovenous communications, both acquired and congenital, are recognized by the evidences of arterial blood in the veins, possibly a thrill and rarely a pulsation of the veins, increased temperature of the parts and increased oxygen content of the venous blood, and increased length of the parts affected. This last condition is found, for the most part, in association with the congenital type.

Arteriosclerosis usually comes later in life than do the conditions mentioned; namely, in the sixth and seventh decades, and is conducive to definite vascular changes, with reduced circulation, to complete occlusion which makes amputation necessary.

In the lymphatic system partial block is noted in the extremities resulting from injuries such as fractures and infections. The more common conditions, varicose veins and ulcers of the extremities, will be the subject of this paper.

VARICOSE VEINS AND VARICOSE ULCERS

Causes. In a series of 847 patients treated at The Mayo Clinic, 237 gave statements as to the origin of their varicosities. Both lower extremities were affected in 50 per cent of the cases; in cases in which involvement was unilateral, the right and the left extremities were affected in about equal number. If the lower extremity is arbitrarily divided into anterior, posterior, mesial and lateral quadrants, the frequency of varicosities, from most to least was as follows: mesial, posterior and lateral in the thigh; mesial, anterior, posterior, and lateral in the legs; mesial, lateral and anterior about the ankles.

In 222 cases the causes of the varicosities were apparently as follows: pregnancy, 109; occupation of patient, forty-eight; heredity, twenty-five; injury, nineteen; phlebitis, eleven, and in ten cases the cause could not be definitely ascertained. In fifteen cases, the patients were suffering, or had suffered from the following conditions: typhoid fever, eight; influenza, two; abdominal tumor, two; pneumonia, myxedema and osteomyelitis, one each.

Pregnancy is the predominating cause of varicose veins among women; occupations requiring heavy lifting and standing positions are apparent causes among men. Judging from the histories, heredity seems to be an underlying factor. Injury, varying from severe contusions to fractures are of significance; local thrombophlebitis, and occasionally pelvic tumors, are contributing factors. Another cause that is not emphasized is long-continued wearing of elastic bands as garters, and I am inclined to believe the habit of sitting with knees crossed is a contributing factor. Intra-abdominal pressure as a result of coughing or straining exerts a definite downward pressure on the column of blood in the internal saphenous vein, resulting in dilatation of the walls of the veins, and valvular insufficiency. Severe illnesses of long duration undoubtedly weaken the muscular tonus of venous walls. Some authors have suggested endocrine disturbance as a possible cause. Presumably, also, the age of the patient has etiologic significance.

Development of the injection method of treatment. Chemical substances were first introduced into blood vessels to produce localized thrombosis by Pravaz, in 1851, in his attempt to cure aneurysm by injections of ferric chloride. Desgranges and Valette likewise adopted the treatment in the same year. Chassaignas and Follin reported fatalities from septic complications. It was not until 1884 that this substance was finally abandoned after the report by Weinlehner of further fatalities, sloughs, and septic thrombophlebitis.

Soquet, in 1854, introduced iodotannic solutions. The thrombi produced were firm, but, due to severe pain, rest in bed for some time was required. After 1876, perivenous injections became popular for varicose veins, hemorrhoids, and rectal prolapse. By 1894, Delore was defending the intravenous method, for it was becoming much in disfavor, and operation remained the method of choice. Tavel, in 1900, used 5 per cent phenol combined with proximal ligature of the internal saphenous vein. Schiassi used an aqueous solution of iodine and potassium iodide injected distal to the resected vein. Borchard, in 1910, discovered that salvarsan and other preparations of arsenic caused thrombosis of veins. Linser, in 1911, began the use of 0.5 per cent mercuric chloride as a sclerosing agent and reported 6,000 cases in which treatment was successful. The preparations of arsenic and mercury, however, had toxic effects on certain patients. Linser gradually substituted sodium chloride for preparations of mercury. Hanschell, in 1913, from his experience in causing thrombosis of veins with quinine in the treatment of malaria, began administering the drug intravenously for that purpose. Sicard and Gaugier, in 1916 and 1917, experimented with luargol and sodium bicarbonate, and found that patients were incapacitated for long periods of time. The year 1921 saw three distinct progressive steps in the sclerosing treatment; Linser substituted, for 1 per cent mercuric chloride, a 20 per cent saline solution; Nobl introduced the use of 50 to 60 per cent glucose, and Genevrier reported satisfactory results with quinine dihydrochloride, 12 per cent, and urethane, 6 per cent. In 1924, Sicard discontinued use of sodium bicarbonate and luargol in favor of sodium solicylate. Wright, in 1930, reported on the use of sodium morrhuate, which has been used at The Mayo Clinic for nearly two years and has been found to be satisfactory. It has good sclerosing qualities, rarely produces general systemic reaction and seems to be the least destructive when accidental spilling occurs outside the vein.

Examination before injection. A general examination is necessary, of all patients affected with varicose veins and ulcers. This is necessary to detect any condition which would in any way be detrimental to the patient in accomplishing the desired results. The following conditions should be thoroughly searched for, and, generally speaking are contraindications to treatment by injection. When there are symptoms of cardiac or cardiorenal dysfunction, such as marked dyspnea, definite bilateral edema, the anginal syndrome, the cause must be found. If treatment seems advisable, it should be applied only after satisfactory restoration of cardiac function. Acute thrombophlebitis occuring after severe illnesses, traumatism, or pregnancy, must not be overlooked. Thrombosis of the deep venous system is most easily detected by binding the foot from the base of the toes and continuing upward, maintaining firm pressure to the knee. Then the patient should be instructed to walk several blocks, and if definite discomfort or pain becomes manifest, obstruction of some part of the deep venous system must be considered. Inspection should be made for enlarged veins over the abdomen, radiating from the superficial epigastric vein, which communicates with the lateral thoracic vein, forming the thoracico-epigastric; such enlargement indicates some degree of occlusion of the femoral or iliac vein. Patients who give a history of unusual sensitiveness of their feet to lowered temperatures, or of intermittent pain in the legs, may have arterial disease, functional or organic, and by no means should be considered suitable for sclerosing treatment. There is every indication that the venous side of the terminal vascular system may become affected in a manner corresponding to that in which the arterial side is involved. It is generally accepted that acute colds and infections, hyperthyroidism, recent operations, especially for pelvic conditions, accompanied by infection, are contraindications to injection, for it is in this last group of cases that pulmonary embolism is most frequently seen. Recent operations on the uterus, followed by radiotherapy, have the same significance as those operations just mentioned. Venous stasis, in the presence of definite skeletal deformity of the feet, accompanied by swelling and pain, is occasionally mistaken for varicose veins, and orthopedic measures often cause the symptoms to disappear. Obviously, injection should not be made in such a case. Hypertension, with any secondary circulatory disturbance, or advanced arteriosclerosis, are contraindications to sclerosing treatment. Likewise, treatment by injection should be withheld in the presence of diabetes, unless sugar balance has been definitely established.

Technic of injection. Properly robed patients are requested to ascend the steps to the examining table and take hold of a bar that is dropped from the ceiling. This aids the patient to maintain his station during examination and treatment. This is a most important step toward minimizing breaks in technic. With the patient standing on the table, the extent and degree of the varicosities are easily determined. The venous pressure in an involved vein is peripheral, due to incompetence of the valves, and to dilatation of the lumen of the vein. The usual test for patency of the veins is the bimanual method in which the fingers of one hand are placed above, on the internal saphenous vein, in the thigh, and the fingers of the other hand over the varicosities in the calf of the leg. The impulse of the column of blood produced by pressure from above is easily distinguishable by the hand palpating the varicosities in the calf; this impulse is not felt if the valves between are competent. This is an important step, for often the saphenous vein above the knee is not seen, and yet accounts for the varicosities below.

The injection is made, using a hypodermic syringe of 2 c.c. to 4 c.c. capacity, through an ordinary beveled needle, gauge 26. I have used the short bevel, but do not find it has a definite advantage over the ordinary long bevel. When the tip of the needle is within the vein, enough blood is drawn into the syringe to make it evident that free flow obtains. The injection is begun, the fluid is injected slowly, and from time to time the plunger is withdrawn a little, to see if the end of the needle is still free within the lumen. The time required for injection of 2 c.c. is usually from half a minute to a minute and a half. By slow injection the possibility of dilating a small vein is eliminated. If, in the course of injection, the return flow into the barrel of the syringe suddenly ceases and there is definite resistance to withdrawal of the plunger, there are three circumstances which might produce such a condition: the wall of the vein may have contracted and covered the opening in the needle; clotting may have taken place in the needle, or the needle may have crept further into the vein and possibly transfixed the opposite wall. By withdrawing the needle slightly, often free flow into the syringe will be reëstablished, but should the needle have punctured the opposite wall of the vein the injection should not be continued at that time. Occasionally veins will suddenly dilate during injecting of the sclerosing fluid. Although there is free return of blood from the vein, and no pain or burning is experienced by the patient, one has at first the impression that there is extravasation of the solution into the tissues, caused by transfixion. One should cease injecting, but should keep the needle in postion, and wait a few seconds. The vein will assume its normal dimension if not transfixed. The patient will experience a sensation of fluid traveling toward the extremity, and injection may be resumed. It is very important that the hub of the syringe be perfectly round and fit tightly into the shoulder of the needle, so that air will not be drawn into the syringe. Another important factor is tightness of the piston within the barrel. The piston should be close fitting, and by applying petrolatum it is less likely to adhere to the barrel when making injections.

If for some reason it is more desirable to inject with the patient prone, tourniquets are applied above and below the point of injection, and sufficient blood is massaged into the vein to make it easy to insert the needle. Then the usual procedure is followed. A pad is applied with pressure over the point of treatment, and the tourniquet is removed as soon as the patient is upright. When injection is in the thigh, firm pressure is applied, as will be described. This is left on for twenty-four hours or longer, depending on the condition of the patient. As a rule, injections are not made above the juncture of the middle and upper thirds of the thigh, for there is always some extension upward of the chemical inflammation of the vein, and this is sufficient to cause sclerosis of the vein as high as is necessary.

After care. Patients are requested to remain seated for about twenty minutes immediately after treatment to obviate any possible psychic or systemic effect. They are instructed to leave the bandage over the point of injection for at least five or six hours, and until next day if it is not too bothersome.

When injection is made in the internal saphenous vein, above the middle third of the thigh, I have made it a practice to apply a pad for pressure over the fossa ovalis, and to leave it on for four or five days, as a precautionary measure during the period of sclerosing. When the patient assumes the prone position, downward pressure in the vein is reduced, and there is a remote possibility of a portion of organizing clot being drawn into the femoral vein if the patient should elevate the leg.

Histologic changes. Histologic changes in the walls of varicose veins which have not been treated, consist first, in marked hypertrophy of the muscular and elastic elements of the media, to compensate for the increased intravenous tension. Later atrophy occurs, in which fibrous tissue is predominant, and an inelastic, sacculated, fibrous tube remains. The valves likewise atrophy, and are reduced to fibrous stumps. Occasionally one finds this process involving the intima, with resultant occlusion of the lumen. Calcified infiltration, or a phlebolith, appears. The effect of this sclerotic process is to elongate the vein, owing to convolutions and sacculations of the weakened walls.

Sclerosing solutions produce cloudy swelling and degeneration of the intimal cells. Hemorrhagic infiltration takes place in the wall of the vessel, resulting in ingrowth of inflammatory elements. A clot develops within the lumen into which connective tissue elements proliferate, with resultant fibrosis of the clot within the lumen.

Treatment of ulcers. This lesion is often referred to as a gravitational ulcer because of the conditions present favorable to its production. The reversed flow of the column of blood within the varicose vein produces retardation of the venous capillary circulation, resulting in lymphedema and a surcharge of catabolic products; anoxemia supervenes, and interferes with nutrition of the tissues. Eczema, attended with severe itching and pigmentation, are always forerunners of formation of ulcer. Any irritation, cut, or scratch in the devitalized epithelial region usually sets up infection of low grade, and ulcer ensues. The site of the ulcer usually overrides a varicosed vein, appears in an area where the greatest amount of irritation occurs and is often at the juncture of a superficial and deep communicating vein known as a "double Trendelenburg positive."

The highest level at which ulcers are found is the juncture of the upper and middle third of the leg; the most common site is the lower third of the legs and the ankles. Miners are usually affected on the leg due to the rubbing of boots, whereas shoes are the irritating factor of the ankles. The ulcers vary from minute abrasions of the skin in a pigmented area to deep necrosis involving the subcutaneous tissues; they may be a few millimeters in diameter or they may encircle two-thirds of the leg. They are usually extremely painful and harbor much infection, which results in a copious, offensive discharge. It has been my observation that ulcers which are the most painful are more amenable to treatment. The average ulcer of long duration should be examined closely for malignant degeneration, tuberculosis and syphilis. Ulcers may also occur as a result of breakdown in the trophic mechanism or may be the end-results of inflammatory processes involving the cutaneous vascular bed, with subsequent replacement with scar tissue. Such a condition is a difficult problem to confront.

Treatments recommended in textbooks are many and varied. Bier's hyperemic method, hot alkaline baths, lead and opium wash, excision and grafting, adhesive strapping, and a host of other forms have been offered, but none has been uniformly successful. If a patient is hospitalized and the leg elevated the lesion will heal without any further treatment, but as soon as the patient walks, edema develops and recurrence takes place. The principle of maintaining uniform pressure to assist the superficial circulation prevents edema from gravitation or stasis. The area of the ulcer is covered with a small gauze pad and pressure is maintained by application of an adhesive webbing bandage, beginning at the base of the toes and extending upward to the knee. A window should never be cut to provide for the discharge, but as the drainage exudes through the bandage it can be washed off and a temporary dressing applied over the bandage. The bandage is left on from five days to three or four weeks, depending on the amount of edema and size of the ulcer. Whenever there is evidence of misplacement, or the skin becomes irritated from the bandage, a change should be made. The time of healing can be approximately calculated by a gravitational, mathematic formula: area in sq. cm. ÷ 5 + 3 = time in weeks. The amount of healing varies from 0.57 sq. cm. to 1.07 sq. cm. each day.

Mortality statistics and general comment. The proportion of deaths resulting from the sclerosing treatment of varicose veins, as reported by Sicard, Kilbourne, and others, is lower than that resulting from surgical operation. Sicard reported a mortality rate, from use of sclerosing solutions, of 1 in 5,000, whereas by surgical methods the rate was about 1 in 250.

The sclerosing treatment of varicose veins is definitely superior to the surgical procedure. There are fewer deaths. Recurrence following surgical measures is about 30 per cent (Sicard), whereas in the sclerosing method recurrence is between 6 and 10 per cent. Patients are not hospitalized in most instances, and continue to work. The average number of treatments given each patient, in my experience, is about seven. The results from a clinical standpoint are very satisfactory, in that the discomfort which existed prior to treatment is, in the majority of cases, relieved, and from a cosmetic standpoint, scarring of the legs is eliminated.

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"Two good aids to health," says a doctor, "are to swim regularly and drink plenty of water." To ensure the most gratifying results, of course, these should be done separately.—Humorist.

NOTES ON DIFFERENTIAL DIAGNOSIS OF GALLBLADDER DISEASE*

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The differential diagnosis of disease of the gallbladder is a subject which may well be divided into two parts—first, a study of those pathological conditions of parts of the body other than the gallbladder, which may simulate gallbladder disease and are not infrequently mistaken for it, and second, a study of the various diseases of the gallbladder itself and the bile passages. All of these must be differentiated one from the other.

In the first group may be mentioned, to begin with, diseases of the thorax and heart, although these are not the commonest of the conditions simulating gallbladder disease. Rightsided pleurisy occasionally gives such pain and tenderness in the region of the gallbladder as to cause much hesitation in arriving at a proper diagnosis. I have seen pain from a beginning pneumonia of the left base posteriorly, give so much pain and rigidity to the right of the epigastrium that acute gallbladder disease, or ruptured peptic ulcer could not be entirely ruled out until x-ray showed clearly the cause of distress. In this case, as in all of these pleurisies, the increased respiratory rate, although but moderate, associated with grunting, gives the first clue as to the true condition. Pleuritic pain is often relieved by limitation of motion, with an encircling band about the lower chest, whereas, the same procedure would only tend to increase pain from gallbladder disease.

Angina pectoris occasionally manifests itself as sharp, stabbing pain in the epigastrium. It is often of brief duration, unaccompanied by respiratory embarrassment, and occurring after meals. It may even appear to be relieved by hot soda water—only to recur at some future date, often with disastrous consequences. In such cases, arterial changes and abnormal blood pressure will frequently be found, although the examination of the heart itself may fail to show evidence of disease. However, the majority of such cases will develop some degree of pain or discomfort on brisk exertion, or, in the absence of pain, there may be mild respiratory embarrassment, giving evidence of impaired cardial response, while the electrocardiogram will give positive evidence of myocardial or coronary disease. And, conversely, a gallbladder pain will occasionally be referred to the lower end of the sternum, thus creating the impression of anginal attacks. In a recent case of this kind the pain came on regularly, with exertion, and even from prolonged bending forward. The patient, a man of 44, had normal heart, normal electrocardiogram and blood pressure. Cholecystography showed a gallbladder which filled and emptied slowly, and following a single duodenal drainage in which normal B bile was obtained, the patient has remained free from pain. Schrager and Ivy(1) cite cases of gallbladder pain referred to mid sternal region simulating angina pectoris.

Intercostal neuralgia of the right side may give pain and tenderness over the gallbladder, but these will be found to be superficial, while deep pressure over the gallbladder will not increase the pain. Usually the tenderness can be traced back along one or two of the intercostal spaces.

Arthritis of the dorsal spine will be found very occasionally as the cause of pain in the gallbladder region. X-ray evidence and relief of symptoms by suitable brace would confirm the diagnosis.

It is to be understood, of course, that in many of the conditions under discussion the study would not be complete without cholecystograms and other x-ray evidence for or against gallbladder disease. This will be discussed in detail later.

Perihepatitis might be confused with gallbladder disease, especially if localized to a small area. Pain is of an aching character and tenderness is more diffuse; increased on breathing and on movement; it occurs late after meals when intestinal digestion is at its height, whereas, the pain of gallbladder disease is more likely to be sharp, stabbing, and tenderness distinctly localized, while nausea and vomiting frequently occur, followed by relief from pain. Jaundice may occur in perihepatitis, and distended veins and ascites may be present. Friction rub may be heard and felt, and respiratory excursion is limited and the right diaphragm higher than normal.

I have seen a gumma of the liver in a known case of syphilis so close to the gallbladder that the diagnosis was somewhat uncertain, as this occurred before the days of cholecystography. Mercury and iodide soon cleared the picture, and a few years later a scar was found at laparatomy at the place where the gumma had been.

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Duodenal and pyloric ulcers occasionally imitate the symptoms of gallbladder disease—and, in fact, the two conditions occasionally occur together. Fortunately, x-ray examination, with opaque meal and gallbladder dye will usually settle the diagnosis, but without such help the diagnosis may frequently remain obscure. In the ulcer cases, the free use of alkalies and a limited diet will reasonably well settle the question, while in gallbladder disease the pain and tenderness will be further to the right of the mid line, usually referred to the back near the right scapula, and not relieved by alkalies. It must not be forgotten, however, that duodenal pain is occasionally referred to the right back. Gastric acidity, as determined by a test meal, is of very limited value as a differential test since it may be high or low in any of these conditions, although naturally, a very high acidity always suggests ulcer.

Duodenal drainage may show very definite evidence of gallbladder disease, as will be described later, while blood in gastric contents, with high acidity, or blood in the stools would suggest ulcer. White and Jankelson⁽²⁾, however, call attention to the occasional cases of severe gastrointestinal hemorrhages in gallbladder disease, which may be mistaken for ulcer.

Jaundice, following a sharp attack of pain, would only incriminate the bile passages.

Duodenitis frequently causes epigastric distress, suggesting either gallbladder disease or peptic ulcer. One striking point is the failure of the symptoms accurately to fit either of the diseases just mentioned,—the distress coming late after meals may or may not be relieved by alkalies, and even so the relief is likely to be incomplete. This condition may be associated with gallbladder or ulcer, but is usually diagnosed by x-ray.

The appendix is sometimes responsible for symptoms closely resembling gallbladder trouble for it is not uncommon to find the tip clear up under the gallbladder. X-ray will usually settle the question. I have not only seen patients operated for gallbladder disease where the high appendix was the sole cause of trouble, but have seen a ruptured appendix high in the epigastrium give all the evidence (except x-ray) of perforating peptic ulcer. On the other hand, Sivori⁽³⁾, cites a case of acute cholecystitis, with pain referred to a normal appendix.

Movable right kidney occasionally gives rise to pain in the right hypochondrium, simulating gallbladder trouble. In one of my cases of this type the patient, a tall, thin woman of 30, had supposed for years that she had gallbladder disease, and came to Denver, expecting to be operated for it. She was rigid and tender over the gallbladder region, and suffered much distress all of the time. In fact, I kept her in bed for two days before attempting any thorough examination, and then—to my surprise, I found the pain, tenderness and rigidity over the gallbladder gone. I was then able to palpate a low, tender right kidney. Nephropexy relieved the condition completely. In these kidney cases, with pain referred to the gallbladder region, there may be pain radiating to the right back, usually a little lower than that of gallbladder disease, but not necessarily to the urinary bladder. Relief from pain on lying down is striking, and most significant, and bimanual examination helps to differentiate, as the tender kidney can usually be felt except during the sharp attacks of pain. Pressure of sudden, jerky type over the 12th rib, or percussion over the same area, with fist against flattened hand causes recurrence of pain when the kidney is at fault but has little or no effect upon a tender gallbladder.

According to Hayes⁽⁴⁾, hydronephrosis, pyonephrosis and nephrolithiasis may give similar but more severe symptoms—plus toxemia, and perinephritic abscess may act like an acute gallbladder, although more frequently bulging in the lumbar region, and pain may be referred toward the shoulders or anterior abdominal wall.

Tumors in the gallbladder region may be kidney, and have been known to press on the bile ducts, causing jaundice, indigestion, and pain in the gallbladder region. Renal tuberculosis may cause hypochondriac pain, with low-grade fever and negative lung-findings. Embolic blocking of the renal artery may simulate gallbladder attacks⁽⁴⁾.

The direction of referred pain may be of considerable diagnostic value, being lower and more likely to be down the ureter if from the kidney, and closer to the angle of the scapula, or across the abdomen if from gallbladder disease. Marked or complete relief of pain on lying down points definitely to kidney pathology rather than gallbladder.

Hematuria may occur in jaundiced cases or after severe colic, but is usually much greater in amount in kidney disease than from jaundice.

Turning now to the second group, namely, the various types of pathological conditions of the gallbladder and bile passages, we will consider but briefly the common signs and symptoms and give more detail consideration to some of the more exact methods of diagnosis.

To give a description of the ordinary symptoms of gallbladder disease would be entirely out of place in this paper, and we will, therefore, turn to a consideration of certain features of value from the standpoint of differential diagnosis. Hypochondriac pain may be of such variable character that we are forced to consider many associated signs and symptoms before deciding its true significance. Dowden(5) calls attention to the fact that the gallbladder, duodenum, pylorus and pancreas all are formed from the foregut, and thinks that pain may be explained by stimulation of the gallbladder by hormones from the duodenum and jejunum, which cause contraction or spasm on account of the closely associated inervation. He reports a case, showing duodenal defect by x-ray, with a long history of symptoms suggesting ulcer. Gallstones were also shown by x-ray, and the use of antispasmodics caused disappearance of the duodenal defect. The exact location of the pain and the degree of local tenderness, spread of pain to the back or across the body, or downward, the presence or absence of dyspnea, or grunting respiration, the presence or absence of marked abdominal rigidity, especially downward to the right, relief of pain by administration of alkalies or the necessity of using large doses of morphine, all help us to decide whether the pain is from the gallbladder, or from other structures near by. I have seen more cases of severe upper abdominal pain caused by a ruptured viscus than from acute gallbladder colic in the past few years. The less severe or more constant types of pain make us think of chronic gallbladder trouble or kidney ptosis, while pain of periodic type, associated with intake of food naturally causes us to investigate for peptic ulcer. Crile, cited by Dowden(5), speaks of the inhibition of diaphragmatic excursion in gallstone colic, and Schrager and Ivy(1) have shown by animal experimentation that distention of the gallbladder and ducts caused marked respiratory embarrassment and that the use of procaine or cocaine prevented this reflex embarrassment. Application of heat may relieve the pain of gallstone colic but increases pain due to inflammation, according to Lowenberg(6).

Abnormalities in gastric juice and the consequent indigestion are too common to require special comment except to express my belief that—there is nothing of diagnostic value in the type of indigestion occurring in gallbladder disease. Gas, belching, heartburn, bloating, inability to take certain foods, are all dependent on the quality of gastric and intestinal juices, the presence or absence of pylorospasm and character of peristalsis, and these symptoms may come from the appendix, kidney or pelvis as well as from a diseased gallbladder.

Jaundice is a most valuable symptom, as it gives an additional method of study. Jaundice is usually classified under three separate types: (1) Obstructive or hepatotegenous, (2) hematogenous, called by some, hemolytic, and (3) suppression or toxic jaundice. The subdivisions of these need not concern us. Obstructive jaundice is usually due to mechanical factors such as stone, scar tissue, pressure from without, malignancy, and so-called catarrhal jaundice, which is also called infectious or toxic, but is quite distinct from type 3 above. In obstructive jaundice, bile salts as well as pigment appear in the blood serum and urine, and in severe or protracted cases, nephritis practically always develops, sometimes with urinary suppression and uremia.

Hemolytic jaundice results from blood destruction, with increased pigment liberation over and above what the liver excretes. The liver functions are otherwise normal, without bile in the urine. This type includes such conditions as icterus neonatorum, chronic or family type, Banti's and Hanot's disease, and general infections.

The suppression type means injury to liver cells in greater or less degree, with partial or complete failure of liver function. Acute yellow atrophy, eclampsia, phosphorus and other severe poisonings and yellow fever illustrate the more severe forms and epidemic jaundice (Weil's disease) is a milder form.

Several ingenious tests have been devised which aid in differentiating some of these types. Of these tests two deserve especial attention: The Van den Bergh test is performed as follows: In the direct method, one-fourth cc. of Ehrlich's diazo reagent is added to one cc. of blood serum. In obstructive jaundice the color changes from pale yellow to violet or pink. In the indirect method, one cc. of serum is added to two cc. of alcohol—and centrifuged. One cc. of this fluid is then added to one-fourth cc. of the diazo reagent, and if the test is positive there is again the change of color to pink or violet. According to C. H. Andrews(7) this test permits of distinguishing frankly hemolytic from frankly obstructive jaundice, being positive in the latter, but is of little value in differentiating icterus, due to liver-cell damage from other types of jaundice. When the direct test is negative, but the indirect is positive, the jaundice is hemolytic in origin.

More recently Shay and Schloss$^{(8)}$ have elaborated an interesting test whereby it is possible to differentiate toxic or infectious types from obstructive or hemolytic types. They include in their toxic type those milder forms such as catarrhal jaundice, which we have previously classified under the obstructive type. Their test depends upon the fact that the carbohydrate function of the liver may be taken as a measure of its working capacity, and they have found galactose the carbohydrate of choice. Galactose was suggested as a test sugar by Bauer of Vienna, in 1906. It is carried from the intestine to the liver and utilizable in amounts from 37 to 40 grams. If it is not utilized it goes into the general circulation where it is practically unavailable as a source of energy, regardless of the state of the endocrine glands, and as there is no threshold for galactose, it is completely eliminated in the urine if not burned up in the liver.

Their method is as follows: The fasting patient is given 40 grams of galactose in 500 cc. of water and lemon juice. Water is given freely thereafter and all the urine collected for five hours, and the total amount of sugar estimated by the Benedict quantitative method. In diabetic patients the glucose must be removed by fermentation and the specimen then tested for galactose. Normal excretion of galactose is from zero to 3 grams.

In mild or local damage to the liver, with adequate reserve, or in damage permitting rapid regeneration of the liver cells, the function of the liver would not be affected and the test would remain within normal limits. Acute, toxic or infectious processes, causing acute and diffuse damage to the liver cells would impair the function and result in an excretion of amounts of galactose greater than 3 grams. This type of liver-cell damage is frequently associated with jaundice, and the test thus aids in differentiating the toxic or infectious jaundice from obstructive, or hemolytic jaundice.

According to Shay and Schloss, readings slightly above 3 grams may be confidently placed in the toxic group. Readings between 2.5 and 3 grams call for a repetition of the test within a few days. They have never obtained readings above 3 grams in the mechanical, obstructive types. This test separates the cases of jaundice due to toxic or infectious origin, such as catarrhal jaundice, from the other silent types of jaundice due to such conditions as common duct stone, cancer of the head of the pancreas, pressure from without the ducts, chronic panreatitis, etc.

Before leaving the subject of jaundice, I should like to remind you of the comparatively simple and valuable procedure of duodenal drainage in cases of suspected catarrhal jaundice. Using Lyon's method of pouring 50% $MgSO_4$ solution into the duodenum has a remarkable effect in these cases, in some relaxing the sphincter of Oddi, or releasing the mucus plug from the common duct, thereby relieving the jaundice within 36 to 48 hours.

A diagnostic study of the gallbladder naturally includes a series of x-ray pictures by the Graham Cole method, and this has enjoyed an enviable reputation for having a very high degree of accuracy. Within the past few years, however, Piersol, Bockus and Shay$^{(9)}$, Turner and Rodis$^{(10)}$ and others, have revived the earlier work of Jones, of duodenal drainage, and a study of the bile sediment derived by this process. Jones$^{(11)}$, in 1924, thought an abnormal pigment content of bile might indicate the existence of several disease conditions, but was not conclusive of any single disease. He did state, too, that, in cholelithiasis, there was a characteristic sediment of cholestirin crystals and calcium bilirubin.

The procedure now used by Piersol, Shay and others, is practically Lyons' technique, in which, after getting the tube into the duodenum, 60 cc. of 33% $MgSO_4$ is injected and the bile collected. "B" bile is centrifuged and the sediment examined under the microscope. Cholesterol crystals and a pigmentary deposit are stressed as being the diagnostic criteria. The pigmentary deposit is described as being a more or less granular precipitate of lustrous golden yellow color. The color varies from pale yellow to deep orange. The presence of cholesterol crystals, or pigmentary deposit, or both of them are found to be pathognomonic of gallstones.

These investigators have made an intensive study of operative cases of gallbladder disease, comparing the results of nonsurgical bile drainage study with cholecystographic study of the same cases.

A detailed summary of these studies would become tiresome, but a few points regarding them should be mentioned. In one series of 38 cases, proved at operation$^{(10)}$, the diagnosis by non-surgical drainage was 89 per cent correct. There were 23 cases of stone in the group. In 24 of the 38 cases, cholecystograms were made, using the oral dye method, and only two were reported positive for stone, and only one of these was found at operation. One case was reported as doubtful, but was found positive at operation.

However, in many of these cases the x-ray reported abnormally functioning gallbladders.

Piersol, Bockus and Shay(9) made an interesting study of 57 surgical cases of gallbladder disease, comparing the results of non-surgical bile drainage with the x-ray cholecystograms, using the dye by mouth. Of the 57 cases, there were 46 cases of stone and 11 noncalculous. They noted that typhoid had occurred in 10 per cent of the cases, and appendicitis had occurred in the same percentage. Of the 46 stone cases, colic occurred in 47 per cent, a history not pointing to gallbladder disease, 52 per cent. Tenderness over the gallbladder was present in 34 per cent of the cases, while 58 per cent had no local tenderness. Test meals in 24 of these cases gave the following: High acidity, 33 per cent; normal acidity, 37 per cent; low acidity, 29 per cent. Tube findings: Cholesterol crystals alone, 9 per cent; pigment alone, 9 per cent; both present, 54 per cent, a total of 73 percent showing diagnostic sediment. In 19 of these stone cases the oral dye was used, with the following reports from the cholecystograms: Normal, 5 per cent; faintly visualized, 16 per cent; delayed emptying, 5 per cent; not visualized, 79 per cent; stones visualized, 32 per cent. In 12 of these cases in which non-surgical bile drainage and x-ray with the dye was done, the percentage of error was 50 per cent in the x-rays, and only 16.6 per cent in the drainage.

Bockus, Shay and Willard(12) draw the following interesting conclusions: In 148 proven cases of gallstones, a positive stone diagnosis was suggested by drainage in 83.8 per cent of the cases, and by x-ray, 29.2 per cent. Evidence of pathological gallbladder was shown by x-ray in 88 per cent of the cases, and by non-surgical drainage, in 98 per cent. They consider non-surgical drainage superior to x-ray as a diagnostic procedure in gallstone disease.

Street(13) combines a liver function test with the intravenous method of cholesystography. He uses phenoltetraiodophthalein (an isomar of tetraiodophenolphthalein) and 30 minutes after injection 12 cc. of blood are removed from the vein. The blood is clotted and in the ice box over night, after separation of the clot by gravity. The percentage of dye in the serum is then determined colorimetrically by comparison with a set of standard tubes. Less than 12 per cent of the dye in a 30 minute specimen, or less than 4 per cent in a one hour specimen is considered normal. Cholangitis and hepatitis cause the greatest retention. He thinks the ability to concentrate the dye is most important in determining the function of the gallbladder, the lightness or density of the shadow being much less important.

Chronically inflamed gallbladders may undergo circumscribed or diffuse thickening of their walls, with excessive proliferation of and invasion of the walls by epithelium, forming crypts and sometimes cysts, according to King and MacCallum(14), who call the condition cholesystitis glandularis proliferans. The condition has been described under many names, such as adenoma, polypus, papilloma, etc. They found the condition present in 9.5 per cent of 400 routine examinations of gallbladders removed for cholesystitis or stones. The condition is not malignant. Kirklin(15) reports 4 cases of papillomata of gallbladder proved at operation, and gives in detail the method of differential diagnosis between this and gallstones. The most interesting point being the fact that they were best seen 20 hours after the dye was given.

Reference has previously been made to obstruction of the bile ducts by pressure from without, by inflammatory swelling and from gallstones. It remains now to briefly call attention to obstruction of the ducts by tumors within them.

Marshall(16) states that benign tumors are extremely rare and that carcinoma is by far the most common neoplasm. Obstructive jaundice is found in most cases and may be extreme, or may fluctuate in severity, or be intermittent. While typical biliary colic is not uncommon in these cases, the presence or absence of pain is of little diagnostic value. A positive diagnosis of the specific cause of the obstruction is rarely possible but since obstructive jaundice is usually a surgical problem, early operation offers favorable results, as the tumors are small, slow-growing, and late to metastasize.

With our newer tests suggested above, we should at least determine fairly early that obstructive jaundice is or is not of a type liable to correct itself.

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THE DIAGNOSIS AND TREATMENT OF HAY FEVER*

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Since it is now admitted by the medical profession that seasonal hay fever is the result of contact with and the absorption of pollens, the proper choice of a therapy is pollen desensitization. This method of treatment involves the building up of a tolerance in our patients, by properly controlled injections of the offending pollen.

At the onset, it might be well to mention the fact that it is only the pollens of the wind-borne pollinating plants that commonly cause hay fever. Many trees, and most grasses and weeds are wind pollinated. Trees and plants having large and showy flowers are insect pollinated, and as such are rarely inhaled in sufficient quantities to produce symptoms. However, if the patient should be in constant close contact with specimens of the more showy flora; working among them in the field, hot house, florist shop, or if he should have fresh or dried flowers in the home, it is entirely possible for him to become sensitive to their pollen, and, as a consequence, develop hay fever.

In the vicinity of Omaha, we have three seasons of pollination. The spring season commences in March and April, when symptoms are due to maple and elm pollen. A few weeks later, the cottonwood and box elder, and later still the walnut and oak pollinate. While it is definitely known that tree pollens do cause hay fever, their period of pollination is so short that often the symptoms are attributed to a cold. Because a great many of these tree pollen hay fever patients are also sensitive to the grasses and weeds, and because tree pollen desensitization greatly enhances the effectiveness of subsequent pollen therapy, it is doubly desirable to treat the early spring hay fever cases by tree pollen desensitization, even though the season is short. The summer season commences in May and continues through June and July. During this period, the patient's symptoms are due to the pollen of various grasses and weeds. At the beginning of this season, symptoms may be caused by the pollen of sweet vernal grass, June grass, timothy, red top, and orchard grass; and toward the last of the summer season by such weeds as English plantain, Lamb's quarters, Western water hemp, hemp, and others. During the fall season, beginning about the second week in August, symptoms are traceable to the ragweeds, cocklebur, marsh elder, and Russian thistle.

The symptoms of hay fever are too well known to occasion much comment. They manifest themselves by a sudden onset at a definite time of the year. The date of onset very nearly always corresponds with the date of pollination of the offending pollen. Thus, the date of onset furnishes a valuable clue in determining the causative pollens. For instance, in many cases we can obtain an idea of the causative factors by having the patient tell us the season of the year in which his symptoms start, and in which localities he has hay fever. For example, a patient sensitive to sagebrush living in western Nebraska, will have his symptoms as long as he remains at home, but should he come to Omaha, he will be free of his symptoms. A survey of the locality readily explains this fact; sagebrush does not exist in Omaha.

SKIN TESTS

Skin tests to determine the type of pollen involved are usually made by the cutaneous method. The dermal findings, when positive, are correlated with the clinical history and a knowledge of the local botanic flora. Obviously, it is unnecessary to test a patient with pollens to which he is not exposed; and therapy based on such findings is of no avail. If a patient has hay fever in March and gives a positive skin reaction to timothy, June grass, and ragweed, treatment with any of these pollens will be futile as a means of controlling his early spring hay fever. Plainly, since our patient's symptoms began before the pollination of grasses and weeds, he must be tested with tree pollens. Thus, in order to intelligently and effectively treat these patients, one must have a knowledge of the local botanic flora; must know the seasons and periods of pollination.

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Now, after obtaining a history, and after correlating same with the local periods of pollination and the positive dermal reactions obtained, the strength of solution used for treatment must be determined. We use dilutions of 1:100, 1:1000, 1:10,000 and 1:100,000 and have found them very satisfactory.

DOSAGE

In determining the strength of the initial dose, the following facts are considered: The degree of cutaneous reaction, either by the scratch or intradermal method; the strength of the extract used; the strength of the weakest dilution giving a positive dermal test; and the degree of pollenosis. This latter is determined by a daily slide count after the method of Durham(1). We have been in the habit of using a 1:100,000 dilution for intradermal testing, and have to a large extent avoided any severe reactions. In less sensitive cases a dilution of 1:50,000 or 1:20,000 is used. Usually, in the average case, the initial dose of pollen is 0.10 cc., of the dilution just above the one giving a positive dermal reaction, given subcutaneously. This amount is gradually increased. Often, the succeeding doses are doubled; i. e., 0.20 cc., 0.40 cc., 0.80 cc., of the 1:100,000 dilution; 0.10 cc., 0.20 cc., 0.40 cc., 0.80 cc., of a 1:10,000 dilution; 0.10 cc., 0.20 cc., 0.40 cc., of the 1:1,000 dilutions; and 0.05 cc., 0.10 cc., 0.15 cc., 0.20 cc., 0.30 cc., of the 1:100 solution. In my experience last year, with fall hay fever, a 1:1,000 dilution was sufficient to adequately control symptoms. However, it must be emphasized that pollen therapy is an individual therapy, and that routine treatment will not benefit all patients.

TIME OF TREATMENT

Successful therapy depends to a large extent on the time at which treatment is begun. Early pre-seasonal treatment is productive of the best results. This means the institution of pollen treatment about ten to twelve weeks before the onset of the season. Injections are given at intervals of five to seven days, the strongest dose being given just prior to the onset of the season. Many authorities contend that a maintenance dose should be given at weekly intervals throughout the season. The strength of this maintenance dose is that of the last one tolerated before the date of expected onset.

USE OF PROPER POLLEN

Only by the careful selection of proper pollen can successful results be attained. The choice of pollen depends upon a knowledge of the local flora, and their seasons of pollination, taken in conjunction with the patient's symptoms and the results of the dermal reactions.

Patients whose symptoms are due to trees are treated with the pollens to which they are sensitive, and are always given the largest dose just before their respective season of pollination.

It has been our custom to use for the treating of grass hay fever a mixture of equal parts of timothy, red top, June grass, sweet vernal grass, and orchard grass. Some workers contend that timothy pollen injections will protect the patient against any grass pollen. My experience has shown better results with a mixture of the grasses, unless the dermal reaction is to a single grass pollen.

Treatment with either short or giant ragweed, or a combination of the two, is adequate for patients whose symptoms are due to ragweed.

In our treatment, we use a one to three per cent pollen extract. A three per cent pollen extract contains three grams of dry pollen to 100 cc. of extracting fluid. We employ glycerine pollen extracts after the method of Brown(2).

CO-SEASONAL TREATMENT

While the method of choice is pre-seasonal treatment, many patients present themselves for treatment after the onset of their symptoms. In these cases, treatment is begun during the pollinating season. Eyermann(3) and others have successfully treated these cases. The writer successfully treated ten cases of ragweed hay fever last year after August 20. It is not necessary to inform these patients that it is too late for treatment for much can be done to help them. The dosage and intervals between injections must be gauged to a nicety. Injections are usually given daily rather than at five to seven day intervals, as suggested for pre-seasonal treatment. The strength of the initial dose depends upon the degree of sensitivity and the degree of pollenosis. A daily injection of 1:10,000 dilution if unproductive of symptoms can then be reduced to a 1:5,000 dilution, either daily or every other day, unless symptoms reoccur when injections are again given daily. Treatment is continued to the end of the season of pollination. This time can be determined by a daily pollen count.

THE SHORT INTERVAL METHOD

This method advocates the completion of a full series of injections in ten to fourteen days, giving daily or twice daily injections in order that the strongest dose of pollen is given just before pollination begins. All signs of reaction either local or constitutional must have disappeared before another injection is given. Should a reaction occur, the subsequent dose is usually diminished, and never increased.

CONSTITUTIONAL REACTIONS

Alarming reactions following pollen injections do occur and have discouraged many in this line of endeavor. Most of these reactions can be prevented. They may be either local or general reactions. Feinberg(4) holds that better results are obtained with a dose of pollen sufficient to give a mild local reaction without any constitutional symptoms.

Constitutional reactions may begin within a few minutes after the injection, and usually within an hour. The earlier they begin, the more severe are the symptoms. Often, there is a dry hacking cough, itching of the palm and of the soft palate, flushing of the face, and an aggravation of the hay-fever symptoms. A slight attack of asthma may follow. Syncope may occur, and not a few fatalities have been reported.

METHOD OF AVOIDING REACTIONS

Each dose of pollen is judged by the reaction to the preceding dose. Should a constitutional reaction occur, or the local reaction persist longer than twenty-four hours, the next injection should be the same or slightly diminished. Under no circumstances should it be increased.

Direct injection into the vein can be avoided by withdrawing the plunger before the injection to see whether or not a vein has been entered. We give our injections over the insertion of the deltoid muscle in the outer side of the arm, using first one arm and then the other.

Eyermann states that seven days are required for the elimination of pollen injected in a normal person; and that a too brief interval between injections may lead to a cummulative effect resulting in a reaction.

TREATMENT OF REACTIONS

The treatment of reactions must be begun promptly. A tourniquet is applied above the site of injection, or skin test; and about one-half to one cc. of adrenalin chloride (1:1,000) injected in the opposite arm. Should the symptoms increase, the injection is repeated within five minutes. Some workers inject adrenalin into the area of the local reaction. Usually, no discomfort follows the reaction period.

EXTRA-POLLEN FACTORS

That seasonal hay fever may be due to substances other than pollen must be taken into consideration. Feinberg(7) has described two cases of seasonal hay fever due solely to orris root. Cohen and Rudolph(5) have mentioned the importance of substances other than pollen as a cause of hay fever. The determination of these multiple sensitivities and their elimination or desensitization to them has greatly aided in the successful outcome of many cases. They mention as complicating factors; other pollens, dusts. orris root, epidermal proteins and foods.

Rowe(6) has repeatedly mentioned that the patient must be studied from the point of view of sensitization to substances other than pollens. When patients avoid these other substances, and in addition receive pollen injections, the therapeutic result is greatly enhanced. Eyermann(3) has reported cases of seasonal hay fever made comfortable merely by avoiding these extra-pollen sensitivities, without the aid of pollen injections.

SUMMARY

The obtaining of successful results in the treatment of hay fever patients depends upon:

1. Selection of the proper pollen.

2. Correlating this selection with the clinical history, dermal reactions, and local periods of pollination.

3. The administration of sufficient dosage of pollen extract.

4. Pre-seasonal treatment together with co-seasonal treatment.

5. The recognition of extra-pollen sensitivities.

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DISCUSSION

H. B. MUELLER, M. D. (Lincoln): I am much interested in hay fever myself, and followed with great interest this paper.

I should like to ask what Dr. Maloney would do in treating a hay fever patient with symptoms of late hay fever, but with skin findings showing early hay fever? It would be interesting to know if Dr. Maloney could tell me something about treatment all the year long; or if he has had any experience treating hay fever not only in a week's time, but during twenty-four hours, giving injections every half hour in increasing doses?

A. A. CONRAD, M. D. (Crete): I happen to be one of those unfortunate neurotics who has hay fever himself, and I should like to find somebody who can do me some good. I have used these pollen extracts for twelve years without much relief. I have tested myself, and have been tested by others. I do have hay fever. This year I have been using an injection every two weeks of one-tenth cc. of 3 per cent concentrate. Last year I got up to thirty thousand units of a compound vaccine or antigen—western water hemp, ragweed, and one or two others—and I still sneeze, and my nose runs, and I feel like the devil a good part of the time. Maybe there is something else that affects me, too.

I am hoping help will come from this yearly treatment. It takes such a long time to get the tolerance up. If I get results, I will publish the fact to the wide world, because I think I am a tough customer.

Last year I thought I had welcome news. A report from the Abbott Laboratories of pollen distributions about Omaha was that there is ragweed up there, but the growth did not seem to be as intense as in past years. I am not ready to state whether my slight relief last year was due to my treatment, or to the reduced pollen content of the air.

I have gone to Minnesota, and cannot get rid of it unless I am on a lake or in the woods. The only time I ever got rid of it was in Portland, Oregon, during my interneship, and I would rather live in Nebraska with hay fever than in Portland without it.

They operated on my nose, and it didn't help. I think probably the only thing is amputation close to the shoulder. There is some fool thing I do not believe anybody has hit yet.

I have known folks who have taken pollen extract for two years, and could get along without it for three years. I wish I were that fortunate. Others react beautifully to certain pollen extracts. The Abbott Laboratories have gone to the point where they are "fractioning" the giant and short ragweed. I showed a stronger reaction to A and B fractions of the giant, and to B fraction of the short than to the whole ragweed.

Allergy interests me particularly because I am afflicted with hay fever. Nobody seems to know a great deal about it or do anything except talk. We have allergy from chicken feathers, and get rid of the chicken feathers. Pretty soon that individual is sensitive to something else. Perhaps contraception in those parents allergic to certain things might help us get away from this neurotic type of individuals.

W. F. MITCHELL, M. D. (Superior): I am not so unfortunate as Dr. Conrad. I never had hay fever; but I have a daughter who has kept me busy for fifteen or sixteen years. In studying her case I am interested in food allergy, of which Dr. Maloney did not make much of a point. I should like to ask as to the percentage of food skin tests in all hay fever and asthma cases.

Don't give up the quest, Dr. Conrad; because I personally had two cases in the last fifteen years who have taken pre-seasonal treatment and who are apparently cured. I have been using pre-seasonal ragweed pollen about that length of time. Two are getting along fine with no treatment for two years.

I enjoyed the paper very much.

FRANCIS W. HEAGEY, M. D. (Omaha): This is a vital subject. You have heard both sides, and I am sure we all have both sides constantly. What interested me was the conservatism of the paper. I think the trouble is we have so many patients who have hay fever, and who have either taken treatment and failed or have heard of people not helped by treatment, that a wave of skepticism swept over the country in regard to any medical treatment for hay fever. That has been abating in the last few years, largely due to the fact men like Dr. Maloney have been more conservative in what they promised the patient. Many patients who have been referred to men who specialize on these cases give these answers: "It is not effective, for I have tried it"; or, "I had tests done and have been sensitive to a good many different things, and they couldn't find which pollen or food caused the trouble."

I think the matter should be discussed frankly with the patient. If I had hay fever, I would not stop trying. I can see no harm in it. As long as you must live in Nebraska and have hay fever, it certainly behooves you to keep trying. I think it largely belongs to the man who has given more time to it than most of us have. There are many simple cases that will respond at once at what seems to be seasonal diagnosis. When they don't, it is time to take account of stock and get them into the hands of somebody familiar with the subject, instead of making further efforts which result in discredit to the method and to the profession.

This work being done in vaccination has its purpose.

The main thing is in the promises we make to the patients. Another question is the expense. He throws everything into expensive vaccines, and has nothing to show for it. If it is a matter of cost plus, give him the opportunity to take advantage of repeated trials. There is no doubt there are certain varieties of pollens that are indigenous to your community which produce results no stock vaccine will give. Part of the trouble is you are undoubtedly sensitive to many different things.

FREDERICK W. NIEHAUS, M. D. (Omaha): Air filtration, which was initiated by Can Leuween of Leyden, Holland, was not mentioned as a method of treating hay fever. There are several devices on the market now. When this apparatus is technically perfected, so that one can be assured that all the pollen is removed from the air, it promises to be the method of choice for the management of these cases. It is also advantageous to have some means of cooling the room. However, patients seem to stand the closed room fairly well except on extremely hot days. I have had a few patients get considerable benefit from home made filters. It is necessary for some to stay in the room for two or three days to get relief, others are fairly comfortable by sleeping in such a room.

I do not agree with Doctor Heagey that the treatment with pollen antigen is harmless. I do not believe a more potent substance is used in medical treatment, as, allergic shock may occur from minute doses or, even, from skin testing. I have had a reasonable experience with desensitization, but I am always happy when the administration of pollen antigens for the season has been finished.

DR. HEAGEY: I mean it is harmless as far as after effects are concerned. I thoroughly agree it is dynamite. Do not let him go home for half an hour after the treatment.

ALACE A. KANI, M. D. (Omaha): I should like to ask the Doctor if in his injection treatments for hay fever he finds any variety of pathology in the nasal respiratory tract in different individuals that would suggest anything in the way of local treatment?

DR. MALONEY (closing): Dr. Mueller mentions an individual having symptoms in August who reacts only to June grass. He did not state whether or not ragweed was tested intradermally. If not, this test should be done, and, in addition, the nasal and ophthalmic method should be used. Most likely, one of these tests will determine the offending pollen, but even if negative reactions occur, I should institute ragweed therapy.

Relative to the effect of nasal pathology complicating hay fever, it is now believed that infection is secondary to hypersensitiveness of the nasal mucosa. Nasal blocking prevents drainage, and secondary infection follows. Nasal surgery aids in the elimination of this infection, but does not, as a rule, relieve the symptoms due to allergy.

I am glad to hear of Dr. Conrad's experience with only fair results after ten years experience with pollen therapy. If one lives in Nebraska and is treated with pollen extracts prepared elsewhere, we should not expect perfect results. Also, one may be sensitive to agents other than pollen; foods, animal proteins, dusts, orris root, feathers, and the like. Unless we take these extra-pollen factors into consideration, our percentage of successful results will be greatly lessened.

I am treating several patients throughout the whole year. If an individual is treated pre-seasonally, and it is found that a certain dose of pollen extract will protect him from symptoms, then this dose is given throughout the year, at intervals of two or three weeks. Many authorities believe that better prospects for a permanent cure are effected by this method.

Dr. Conrad mentioned contraception as a cure of hay fever. Unfortunately, we inherit sensitiveness not only from our parents, but also from our grandparents.

Let me add, skin tests are only a clue. If you base diagnostic procedure on skin tests alone, you are doomed to failure. Skin tests give a clue which we must prove by clinical trial, i. e., by the correlation of positive dermal reactions with a knowledge of the local flora by the administration of food, etc., by administrations of food to the individual, or skin tests will be more often wrong than right. Especially in younger patients, if you find an individual who says he cannot tolerate a certain food, and you say, "What does it do to you?", and he answers, "I just don't like it," I have yet to find such a case in which the disliked food did not give a positive skin test.

I should like to leave an axiom with you in proof of the contention allergy has a definite field, and the cause can be found in the majority of cases. In each case there is a definite cause of that syndrome. It is up to the allergist to find it. If you do not find it by trying to observe the common causes, it is up to your ingenuity and imagination. The better detective one is, the better allergist he may become.

A CONSIDERATION OF THERAPEUTIC ABORTION AND LAPAROHYSTEROTOMY WITH STERILIZATION IN CERTAIN ORGANIC DISEASES COMPLICATED BY PREGNANCY*

HAROLD S. MORGAN, M. D.,
Lincoln, Nebraska.

At present there is a changing sentiment in respect to the influence pregnancy may exert with respect to pre-existing or concomitant disease, and the obstetrician is being called upon more frequently by the family physician or internist to interrupt a given pregnancy in order that disease may be controlled or the life expectancy of the patient be materially increased. At the same time, the question of preventing further pregnancies in these cases is coming more and more to our attention. It is not the purpose of this paper to present a plea for widening of the indications for therapeutic abortion and sterilization, but rather to present, for your consideration a proven method for therapeutic abortion, wherein sterilization is contemplated, together with a brief review of the indication for the operation in three particular groups of cases; namely, tuberculosis, chronic nephritis and heart disease complicated by pregnancy.

Laparohysterotomy is the method referred to and is in short, a minature caesarian section and the technique is essentially the same. The intestines are walled off with a gauze pack. A small midline incision through the uterus, serves to expose the gestation sac which is then removed, usually without rupture. A piece of gauze wrapped around the finger serves as an efficient method of removing the decidua from the cavity. The internal os is dilated slightly with a Hegar dilator or hemostat to afford adequate drainage and the incision closed. Sterilization usually follows and is best accomplished by excision of both cornua and accurate approximation of the walls with mattress sutures. The severed ends of the tubes may then be tied and sutured, either between the layers of the broad ligaments or approximated to the posterior leaf of the broad ligament. In one recent case. it was deemed advisable to shorten the round ligaments at the same time in order to correct a second degree prolapse that was causing symptoms. This was accomplished by the Olshausen method. In general though, it is unwise to complicate the operation, by the addition of other operative procedures, for we must bear in mind the fact that these patients are suffering from other serious pathology, and that prolonged operative procedures not only increase the risk to the patient, but are actually liable to cause more harm than good.

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*Read before annual meeting Nebraska State Medical Association, Lincoln. May 24. 1932.

The operation of hysterotomy, either vaginal or abdominal, has definite advantages over other methods of therapeutic abortion. These briefly stated are: Minimal blood loss, complete emptying of the uterus at one sitting, thus saving the prolonged bleeding so often associated with incomplete abortion, and lessened morbidity. These advantages are of particular importance in the groups of cases to be discussed.

There are many conditions for which interruption of pregnancy with sterilization have been recommended; a brief survey of the literature will reveal tuberculosis, chronic nephritis, chronic heart disease, eclampsia, repeated toxemia in succeeding pregnancies, diabetes, contracted pelvis, mental disorders and epilepsy as having all been advanced as sufficient grounds for the interruption of pregnancy. It is not the purpose of this paper, nor will time permit, to go into the arguments for or against abortion with respect to these conditions, save in the instance of tuberculosis, chronic nephritis and heart disease. In these conditions the writer personally feels that serious thought must be given the problem and a definite policy laid down, for we are called upon almost daily to make such decisions.

In tuberculosis complicated by pregnancy, each case must be considered as a separate problem and to a great degree, the obstetrician must be guided by the internist as to the extent and degree of the tuberculosis. The writer must confess to a feeling of radicalism in the consideration of this problem, in that he believes that no case of pulmonary tuberculosis is benefited by pregnancy and that each succeeding pregnancy and the care of the child afterwards shortens the mother's life. One must, in making a decision in this type of case, take into consideration the type of lesion present, the duration of arrest, if arrest has been obtained, the number of children previously born to this mother, as well as the duration of this pregnancy. Little ground is gained if interruption is done after the fifth month.

In general, a minimal lesion in a primipara will be benefited by a simple therapeutic abortion or vaginal hysterotomy after second month. The same procedure is advisable in patients in whom an arrest of the tuberculous process has only recently been obtained. In these patients it is desirable to prevent pregnancy until arrest has been established for a long period of time. The National Tuberculosis Association feels, I believe, that no case can be pronounced cured until the process has been arrested three years. It may not be necessary to prevent conception for this period of time, but the physician must realize that the human organism suffers to a considerable degree from the strain of labor and the puerperium and that the care of the baby afterwards is not accomplished without effort. To this end, I feel that the strain of pregnancy, labor and the puerperium both immediate and delayed should be avoided. Here an individual evaluation of the conditions present, is the only way that decision may be made. In patients who have previously born children and in whom the lung process is active, hysterotomy and sterilization will remove the danger of the pregnancy and safeguard the mother from additional pregnancies. The problem is somewhat different in pregnancy, complicating an advanced and severe tuberculosis. In this type of case there is usually little hope for the cure of the tuberculosis in the mother and caesarian section at or near term with removal of the baby from contact with the mother is the procedure of choice.

Specifically, laparohysterotomy with sterilization, should be reserved for those cases of pulmonary tuberculosis complicated by pregnancy, wherein the lesion is minimal or in a moderately advanced stage, and where it is desired to avoid the strain of this and succeeding pregnancies, in order that the disease may be arrested and the mother returned to her place in the family. When so utilized it is a conservative and life saving procedure.

In chronic nephritis complicated by pregnancy, we are at once faced with the knowledge that there is a direct ratio existing between the incidence of nephritis and increasing parity. Stander and Peckham have adduced evilence to show that the maternal mortality in a group of chronic nephritics between the third and fourth decade is 42.53%, whereas the average mortality in that age group is 7.5%. The foetal mortality in mothers suffering from chronic nephritis is 21% of viable babies as compared with 9.5% for all patients. Steiglitz, in a study of chronic nephritis complicated by pregnancy found none of the group of patients to be in good condition in from 6 months to 3 years following their pregnancies, only 15% were in fair condition, 45% were in poor condition and 25% were in bad condition. From the study of his group of 40 patients he concludes that pre-existant renal and/or vascular disturbance is permanently exaccerbated and degenerative processes accelerated by pregnancy.

These observations reflect to a great extent changing thought in this respect today. Chronic nephritis, complicated by pregnancy offers a serious prognosis, the gravity of the condition, varying in direct proportion to the multiparity of the individual, hence, laparohysterotomy and sterilization appears again as a conservative measure offered as a means of prolonging the mothers life. Stander has recently given us information along laboratory lines that may prove of great value in an earlier differentiation between chronic nephritis and other toxemias of pregnancy, thus enabling us to attack the problem before great damage is done to the kidney.

In the consideration of chronic heart disease complicated by pregnancy, it is well established that patients with compensated heart disease bear pregnancy well. It is only in the decompensated heart that we become alarmed and in these cases the obstetrician must be guided by the internist. If it is agreed that the pregnancy should be terminated, laparohysterotomy and sterilization should be considered for it is important that these patients' hearts be saved from the strain of this, as well as succeeding pregnancies.

CASE REPORTS

Case No.	Age	Date	Para	Duration of Gestation	Operation	Reason	Convalescence
240650	28	10-12-31	7	5 mo.	Laparohysterotomy. Bilateral Cornual Resection of Tubes.	Pulmonary T. B. C.	Uneventful.
18318	27	3-31-32	3	3 mo.	Laparohysterotomy. Bilateral Cornual Resection of Tubes. Suspension of uterus for prolapse.	Pulmonary T. B. C.	Uneventful.
212205	23	3-8-29	10	4 mo.	Laparohysterotomy. Bilateral Cornual Resection of Tubes.	Nephritis. Convulsions with last 2 pregnancies.	Uneventful.
235705	26	3-5-30	1	4 mo.	Laparohysterotomy. Bilateral Cornual Resection of Tubes.	Rheumatic heart disease. Aortic insufficiency. Albuminuria hypertension.	Uneventful.

In the general consideration of the question of therapeutic abortion and sterilization, consultation with at least two other physicians is advisable and if sterilization is to become a part of the contemplated procedure, it is advisable to have a written request for sterilization signed by both the patient and the husband, such request to be filed with the permanent record of the patient. It is only by this means that the doctor can protect himself and the hospital from some cases of an unforseen change of heart on the part of the patient, years later.

In presenting the following brief case reviews, the writer is indebted to Dr. Norman F. Miller, Professor of Obstetrics and Gynecology at the University of Michigan, for the privilege of reporting three cases from that clinic, Cases No. 1, 3, and 4 in this report.

CONCLUSIONS

1. Tuberculosis, chronic nephritis and chronic heart disease, when complicated by pregnancy, demand an individual study of each case before decision may be made, concerning therapeutic abortion and sterilization.

2. In the majority of instances, the physician must determine to his own satisfaction, whether or not the patient will again jeopardize herself by becoming pregnant, and if future pregnancies will again force the issue of therapeutic abortion, sterilization should be urged.

3. In view of our knowledge of the ultimate mortality in women suffering from chronic nephritis. when complicated by pregnancy, and the high foetal mortality in this disease, therapeutic abortion and sterilization should be urged as soon as the diagnosis is made. In case the diagnosis of chronic nephritis is not made until after delivery, as is so often the case, sterilization or contraception should be urged.

4. In those cases wherein it is deemed advisable to save the mother the strain of pregnancy and at the same time protect her from the strain of future pregnancy, parturition and the puerperium, laparohysterotomy and sterilization is the procedure of choice.

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DISCUSSION

RALPH LUIKART, M. D. (Omaha): There is one point on which he did not have time to elaborate. Other points were well brought out. I think stress should be made on the importance of the type of anesthetic to be used. It must be regional or local. There is one heart condition in addition to those mentioned, which is as troublesome as decompensation of the heart, and that is stenosis. Very serious consideration must be given such a case.

I think it is a timely paper. I quite agree more cases are brought to us constantly, and the responsibility rests upon the diagnosis of the internist as to what this patient will tolerate. The obstetrician himself is not in position to determine how great an additional load can be put upon an impaired heart.

H. E. HARVEY, M. D. (Lincoln): A survey of recent literature will bring to one's attention the fact that the supposed advantages of the termination of pregnancy are controversial, not only from the social side of the situation, but others as well. Once it is agreed abortion becomes necessary, it is obvious that it would be folly to have that patient return with the same condition recurring.

I think there is one point that should be emphasized in this connection, and that is the possibility that patients may have a change of heart. That might bring up a situation overlooked in the beginning. If it is once agreed termination of pregnancy is desirable and acceptable in certain cases, the principle could be extended to other chronic progressive diseases other than those discussed.

DR. MORGAN (closing): Dr. Luikart brought out the question of the type of anesthetic to be used. I purposely refrained from going into that because time did not permit. There is another type that may be used without danger to the patient. It is called the avertin anesthetic.

As for the other problems of heart disorders, I believe the obstetrician is treading on thin ice when he attempts to make the decision regarding this case. I think he should call into consultation the best heart man he can find, an internist who has had definite experience with cardiac disease and pregnancy. I am in accord with the practice of sterilization as brought out by Dr. Harvey. I should like to emphasize the absolute necessity of getting a signed statement by the husband and wife requesting the physician to sterilize the individual, setting forth that they understand why it has been urged, and realize they will never be able to have children again from that union.

Two cases in my own experience came back three years later and wanted a baby. As a matter of fact, they raised a bit of a fuss about it. It can get into a nasty situation unless you have evidence protecting the doctor and the hospital.

EARLY INTRINSIC CANCER OF THE LARYNX—TREATMENT BY THE LARYNGO-FISSURE METHOD—REPORT OF TWO CASES*

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The results of treatment of early intrinsic cancer of the larynx by the laryngo-fissure method are so highly satisfactory that too much stress cannot be laid upon the prompt diagnosis of the condition.

Unfortunately many cases are permitted to pass the stage where the method is applicable, largely due to the fact that so many physicians have not developed the technic of inspection of the interior of the larynx and the "hoarse patient" is treated as having a chronic laryngitis(1). Thus the condition progresses to a point where consultation is necessitated and the true condition discovered, often in the advanced state where extremely radical surgery is the only remedy remaining to offer the patient.

The term laryngo-fissure might possibly be more descriptive if designated "partial laryngectomy" for to all intents and purpose that is the ultimate result. Briefly the technic as described by Sir St. Clair Thompson consists of a median incision from the hyoid bone to the sternum exposing the thyroid cartilage, the cricoid cartilage and the trachea. Tracheotomy is next performed, after which the larynx is opened by dividing the thyroid cartilage and the tissues of the anterior commissure region exactly in the mid line. Through the open larynx the trachea above the tracheotomy tube is packed with gauze to prevent aspiration of blood. With a periosteal elevator the endolarynx of the affected side is separated completely from the overlying wing of the thyroid cartilage. The perichondrium of the outer surface is next elevated and then the greater part of one wing of the thyroid cartilage is clipped off. The involved tissue is thus satisfactorily exposed to view and easily manipulated.

The undermined endolarynx of the affected side is then grasped and resected to "show the whole length of the cord from the anterior commissure backwards to the vocal process of the arytenoid cartilage, which should always be visible in a successful removal. It should show an intact ventricle of Morgagni and the greater portion of the ventricular band above, while below it should include the uninvaded subglottic area."(2)

After control of hemorrhage the tracheal plug is removed, the larynx is closed by deep catgut sutures through the perichondrium and the wound completely closed by approximating the muscles, fascia and skin with silkworm gut. The tracheotomy tube is left in place for twenty-four hours when it is permanently removed and the wound allowed to close.

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*Since the completion of this manuscript Case No. III has been completed making a rapid and uncomplicated immediate post operative recovery. However, sufficient time has not elapsed to allow speculation as to eventual outcome, and this case will be reported in future reports bearing on this same subject matter.

Two cases are presented to illustrate the pleasing results of the method.

No. 1. J. J. O., male, age 45. Initial examination July 23, 1930. History of hoarseness of four months duration, rapidly becoming worse during last six weeks. The patient gave a history of intermittent attacks of hoarseness over a period of several years dating back to what he thought was an attack of typhoid fever. There had been some recent loss of weight. Indirect laryngoscopy showed a pale, rather edematous tumor involving the middle half of the right vocal cord, producing no particular fixation but showing definite infiltration. General physical examination was negative. The blood Wasserman reaction was negative.

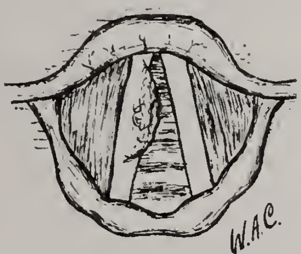

Fig. I. Case No. 1. Appearance of larynx at initial examination showing tumor involving about one-half of the extent of the right vocal cord.

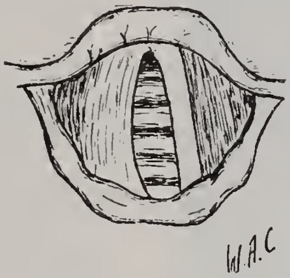

Fig. II. Case No. 1. Appearance of larynx two years after operation showing dense fibrous band, which in a measure, takes the place of the true right vocal cord.

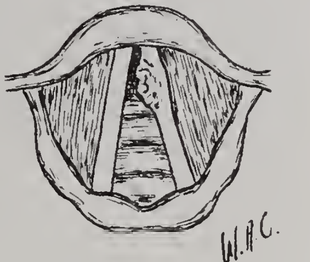

Fig. III. Case No. II. Appearance of larynx at initial examination showing papillomatous appearing tumor of left vocal cord near anterior commissure.

Biopsy was done by direct laryngoscopy at the Clarkson hospital, Omaha, July 24, 1930. The pathologist's report was epithelioma.

Laryngo-fissure was performed August 9, 1930, and a cauliflower tumor was found on the right vocal cord; tumor sharply delimited, no evidence of extension beyond limits of the vocal cord. Apart from a mild acute bronchitis developing on the fourth post-operative day the patient made an uneventful recovery and was dismissed from the hospital on the ninth post-operative day.

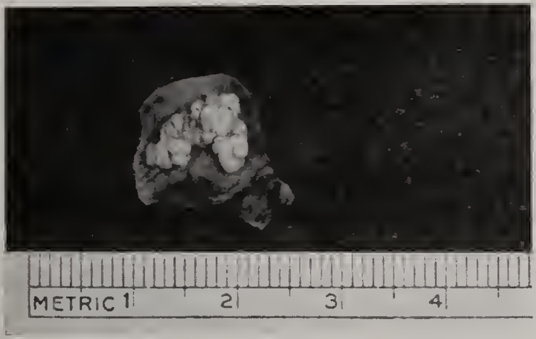

Fig. IV. Case No. I. Tumor of right vocal cord showing size of tumor and the extent of surrounding tissue which has been removed.

The interior of the larynx has been examined at intervals, but no evidence of recurrence has been noted over a period of two years. The loss of weight has been regained. The patient has a rough, but servicable voice.

Case No. II. H. A., male, age 50. Initial examination on October 12, 1931. History of hoarseness of three weeks duration which appeared following an attack described as acute laryngitis. Indirect laryngoscopy showed a thickened left vocal cord with a papillomatous appearing elevation near the anterior commissure. General physical examination was negative. In view of the history, the condition was tentatively diagnosed as of inflammatory origin and voice rest plus an oily lubricant spray prescribed.

Examination three weeks later showed no appreciable change and a biopsy was done on November 7, 1931. The pathologist's report was "There is a definite epithelial cell growth in the submucosa, growing in strands and columns without a demarcating basement membrane. There is an occasional mitosis. Some of the cells show marked irregularity and angular outlines. Diagnosis-Carcinoma."

On November 17, 1931, laryngo-fissure was performed. The growth had been almost completely removed at the previous operation but the anterior one-half of the vocal cord was deeply infiltrated. An uneventful convalescence was made and the patient dismissed from the hospital on the tenth post-operative day.

The interior of the larynx was examined at frequent intervals showing satisfactory healing except for a small projecting bit of granulation tissue near the anterior commissure. This interferred with attempts to speak and was removed with biting forceps by direct laryngoscopy on

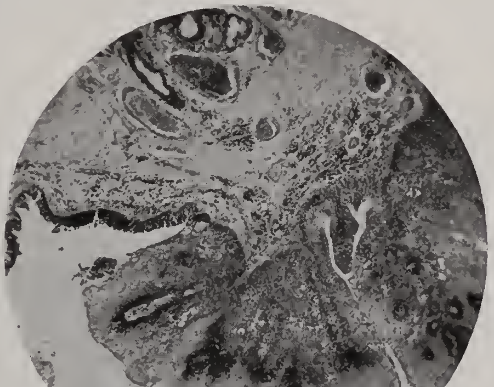

Fig. V. Case No. 1. Photomicrograph showing epithelial cells in an irregular manner throughout the stroma. What basil membrane could be identified is irregularly placed.

May 19, 1932. No tumor was found in the removed tissue. The larynx was examined last on July 8, 1932, the interior being perfectly smooth. A servicable voice is slowly being acquired. While in this case it is too early to state that recurrence is unlikely. the very early diagnosis and removal would seem to justify a favorable prognosis.

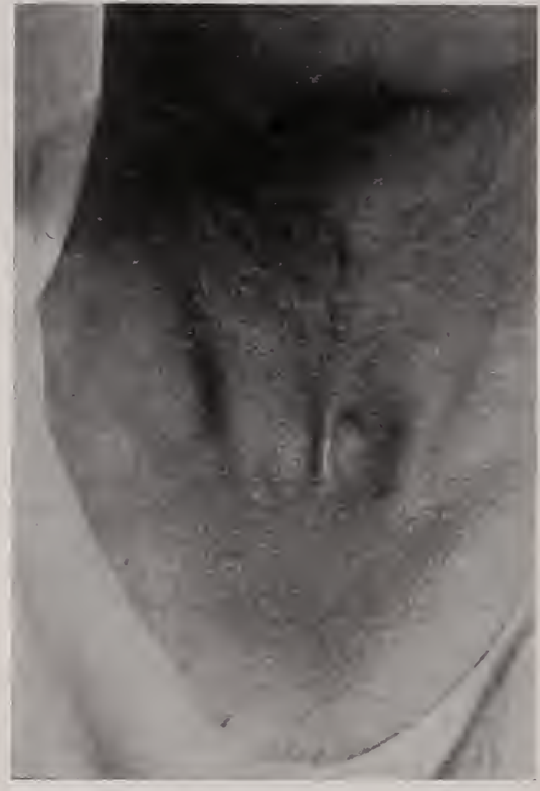

Fig. VI. Photograph of Case No II, eight months post-operative, showing a complete healing with a minimum amount of deformity.

The procedure offers the patient the following decided advantages over the less fortunate individual whose condition has reached a stage necessitating a total laryngectomy:

1. The operation is satisfactorily carried out under local anesthesia.

2. A rough, but servicable voice is preserved.

3. The normal air passage is not sacrificed.

4. There is a minimum of shock—patient is usually up on the following day and released from the hospital in a week to ten days.

5. There is practically no mortality rate from the operation per se.

6. Statistics show that lasting cure is obtainable in 80-90 per cent of the cases.(3)

7. If recurrence does present, resort may still be had to total laryngectomy without having comprised the patient's chances of recovery.

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CONSERVATIVE RENAL SURGERY

ARBOR D. MUNGER, M. D., F. A. C. S.,
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During the past decade there has been a noticeable trend toward conservatism in kidney surgery. For this the urologist, with his increasing knowledge of the physio-pathology of renal affections is largely responsible.

The conservative handling of ureteral obstructions not infrequently will restore a hydronephrosis to a non-symptomatic and normal physiological realm. Even in some of these infected hydronephrotic sacs with ureteral dilatation and lavage very often recovery is achieved without surgery. Where heretofore the presentation of such a kidney with low function and manifest infection were objects of nephrectomy, now removal of the obstruction and proper combatting of the sepsis often give striking results. Where surgery is necessary a simple loin drainage of an infected hydronephrosis or pyonephrosis often presents a happy outcome. Properly instituted plastic surgery on the pelvis of the non-infected hydronephrosis will save many nephrectomies and it is remarkable how these kidneys, virtually functionless from long continued pressure, will recover their function in due time with the release of this pressure. Every kidney operation should be carefully planned toward the probability of being able to save that kidney. Careful urographic studies will outline the possible degree of anatomic damage. Functional tests will tell a great deal about the physiological stability of the kidney while proper laboratory studies of the existing infection, if present, will help direct the course of attack. Invasion of the renal structures with members of the cocci group invariably give better combat ground than organisms of the colon group, hence better prognosis for salvage. Colon bacilli have a tendency to produce extensive suppuration in the kidney parenchyma eventually sclerosing and destroying the entire secreting substance of the kidney.

Not infrequently the condition which is the most acutely fulminating is the best adapted for proper conservative procedure. A large solitary staphlococcus abscess or perchance a metastatic perinephritic abscess often with cortical suppuration, or a single kidney studded with myriads of small cortical abscesses may be perfectly well saved with proper loin drainage or decapsulation with drainage.

Surely doubt will and does frequently arise as to the possibility of saving a kidney, yet where this doubt exists and the patient's condition permits, a series of pelvic lavages and kidney function tests or retention ureteral catheter drainage may bring about improvement and help one to reach a correct decision. Then, too, this preliminary procedure together with persistent urinary antisepsis, properly managed, abundant fluid intake and rest in bed certainly react to place the patient in a better condition for operation. Under such conditions where finding it necessary, then a primary nephrectomy may be completed with minimal hazard to the patient. I have seen primary nephrectomies instituted on acutely fulminating pyonephrotic kidneys with resultant death. And no credit here to the surgeon who would not institute sufficient measures to minimize the risk.

The question of nephrectomy for calculus in the kidney is often a matter calling for the most acute judgment. In such cases it is especially important to conserve the kidney for the well-known reason that this disease has a tendency to be bilateral and even where there is no stone in the opposite kidney, one may develop at a later date, and naturally cause great anxiety if one kidney has already been removed.

We know that the record for recurrence of stone in the kidney is high. I believe too high. It is my opinion that there has been in the past too great a tendency to look upon renal or ureteral calculus as a disease per se, the operative removal of which was the all. Happily this viewpoint is being rapidly dissipated. Our duty to the patient rests not only in the manual act of removing that stone but as well we must have a sufficiently vital interest in the patient's welfare to search for and dissipate in so far as possible, all potential stone forming factors. We must search for and have removed any possible contributing remote focal infection. And especially is this imperative if the invading organism of the urinary tract is of the streptococcus family and there exists a remote focal area in contact or involving bony structures. This association may be conjectural but my observation leads me to feel a certain co-relationship between the two. Obstructive processes in the urinary tract which trend to refute drainage must be corrected. Ureteral and urethral strictures, ureteral kinks, anomolies, obstructions at the vesical neck, etc., must be searched for and eliminated. Then, too, every effort must be put forth to sterilize the infected, if present, urinary tract. This is one's duty in the interest of prevention of recurrence of stone which bespeaks of course ultimately the simple method of conservation of renal tissue.

Traumatic kidney opens up a very wide field for conservative surgery. Given a patient with a history of injury presenting a frank hematuria, contusions and some pain over the lumbar region, the situation is essentially self diagnosable. It is unfortunate that many patients with this picture are subjected to immediate nephrectomy with the idea in mind of stopping hemorrhage and preventing extravasation of urine. I believe it can be accepted as a good working edict that if a patient lives long enough to be seen in the hospital he certainly does not have a tear into the large vessels of the pedicle and it is unlikely he will bleed to death from a rent into the parenchyma or smaller vessels. Constant expectant observation with sedatives and recovery from shock should be attempted before surgery is instituted. Frank hematuria is usually indicative of a communicating injury between the parenchyma and kidney pelvis and this avenue of drainage is not infrequently self sufficient. Where the picture is that of progressive flank pain with increasing muscle spasm and fullness, temperature and a progressive hemorrhagic syndrome, surgery should be instituted promptly. But let the surgery be conservative. The primary indication is probably for adequate perirenal drainage because of extravasation. The fractured kidney, even though badly comminuted, may usually be placed in apposition with a gauze pack with surprisingly excellent results. Let us, however, temper our conservative wisdom with uncompromising radicalism when necessary. One may be confronted with a complete severance of the ureter and a relatively sound kidney. The ureter is such a small organ that it seems out of proportion to sacrifice a kidney for so small an injury and one may be tempted to do an anastamosis. Nevertheless, these are cases for prompt nephrectomy in most instances.

The pathologist may stare at you in blank amazement when the speciman is submitted to him, the other staff members may shake their heads in knowing sympathy and decide the less said about it the better. However, all this sort of thing must be endured if a fearless and conscientious wisdom has been exercised for the best good of the patient. In one of our New York hospitals rests a beautiful speciman of a badly fractured kidney. It is exhibited to visitors with the history of saving the patient's life through expeditious removal as soon as the patient was admitted to the hospital. The pelvis is not torn, the ureter was not severed nor the pedicle injured. It is a beautiful speciman but had it not been removed it undoubtedly would have been a fairly useful organ functionally the rest of the patient's life.

This brings us to the consideration of those cases wherein a ureter has been accidentally cut at operation. Are we justified in attempting to save such kidneys by a plastic procedure or implantation into the bladder or bowel? I believe it to be almost universally accepted that any plastic procedure attempted will only lead to grave disappointment. Unquestionably in most instances a nephrectomy should be performed, yet what a terrific position for the surgeon to be in. The severance of such a small thing to necessitate such a grave procedure. The music had better be faced and thereby have it over with rather than listen to the minor chords of a turbulent symphony over a period of years. In lieu of the impracticability of removing the kidney a ureterostomy through the flank will serve as a temporary expedient. Do not tie off the ureter nor attempt a plastic. A healthy ureter severed sufficiently low may be very satisfactorily transplanted into the sigmoid and the kidney saved.

The indications for nephectomy are often just the opposite of what the casual observer might expect. The paradox is that it is often the very bad looking kidney which can be saved or conversely it is the healthy appearing kidney which frequently has to be sacrificed and especially where ureteral continuity has failed.

Kidney surgery should be as radical as necessary but as conservatively radical as possible.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

J. STANLEY WELCH, M. D., Chairman,
Lincoln, Nebraska.

In Three Parts—PART III

IV. UNDERGRADUATE MEDICAL EDUCATION

Nebraska is fortunate in having many "A" class universities and colleges. In several of these much premedical work is offered. In several also the fundamental sciences are taught to the students of nurses training schools and to dental students. In at least two, definite pre-medical corricula are offered.

Nebraska has two class-A medical colleges, in the University of Nebraska and the Creighton University. Practically every graduate from each of these receives an internship in an A. M. A. accredited hospital. In this relation it is interesting to state that the examining boards of eighteen different states now require an internship certificate before being permitted to take the state board examination for licensure. It is accordingly complimentary that Nebraska alumni may qualify in every state.

V. FACTS ABOUT HOSPITALS IN NEBRASKA

The troubles which hospitals have, in common with other institutions, due to the depression, lends added interest to facts recently obtained from all hospitals in Nebraska through the annual census of hospitals, conducted by the Council on Medical Education and Hospitals of the American Medical Association. The complete survey, covering the United States, will be published in *The Journal of the American Medical Association* for June 11, 1932.

The state of Nebraska now has a total of 107 hospitals admitted to the Hospital Register, as compared with 111 hospitals one year ago. The total number of patients admitted to these hospitals during their past fiscal year is 69,674. The total bed capacity is 9,780 and shows an increase of 69 beds during the past year. In addition, there are 573 bassinets. The average census of patients in the hospitals shows 7,411 as compared to 7,441 a year ago. The hospitals reported 6,053 births—an increase of 1.041 over 1930, indicating the increased use of hospitals for maternity cases.

Sixteen of the hospitals in Nebraska reported that they have an outpatient department. Only five of these were of sufficient size to constitute a true out-patient department. A sixth hospital reported a total of 445 outpatients, but omitted to give the number of visits made by these patients. The total number of outpatients accounted for was 17,531 and their visits to the hospitals amounted to 49,802. The outpatient departments of the state, therefore, accomplished about as much work as one good sized city dispensary would do in one-third of a year.

The classification of the registered hospitals in Nebraska according to the type of service rendered shows 87 general hospitals; 5 nervous and mental hospitals; 1 tuberculosis hospital; 1 orthopedic hospital; 8 hospital departments of institutions and 5 others of miscellaneous type. Owing doubtless to its large proportion of rural territory and the fewness of large towns or cities, many of the hospitals of the state are necessarily small. Fifty-three of them are owned by individuals; twenty are sponsored by churches; twelve are owned by the state; nine by independent incorporated hospital associations; eight by the federal government; four by cities; two by counties and one by a fraternity.

To staff all of the hospitals of the state requires 866 physicians on the regular staffs and 284 in consultant positions. In addition to those on the regular and consultant staffs there is an unknown number of physicians who occasionally send in patients. Fourteen hospitals employ a total of forty resident physicians, and twelve hospitals provide internships for 46 interns. Five hospitals have dental service making use of 33 dentists. Forty of the hospitals are administered by physicians, including a number in which the physician is both owner and administrative head. Forty-one are administered by registered nurses and in the case of 26 the superintendent is a lay person.

The annual census of hospitals, for a number of years, has included the questions: "Does the hospital have a laboratory?"; "Who is the director?": "Does the hospital have an x-ray department?"; "Who is the director?" These questions for the present year brought out the information that 59 hospitals reported having their own laboratory and 70 claimed to have their own x-ray department. Forty-five laboratories are under directors named in the report, and 54 x-ray departments gave the names of their directors.

Schools of nursing are maintained for 19 hospitals in the state, as compared with 26 schools of nursing in 1923.

Ten of the twelve hospitals providing internships are approved for intern training by the Council on Medical Education and Hospitals and two other hospitals are under consideration for approval. All of the ten hospitals approved for intern training give a twelve months' internship, consisting of mixed or rotating services. These ten hospitals have an aggregate bed capacity of 1,821. The report of the hospital examiners of the American Medical Association show that the internships in Nebraska hospitals have been improved considerably in recent years.

The definite tendency is to regard the internship as constituting a true fifth year in medicine. Around 95 per cent of all medical graduates are voluntarily taking a fifth year in a hospital, regardless of whether either the medical school or the state board requires it. As a matter of fact, only fourteen of the seventy-eight medical schools and fourteen of the forty-eight state boards require the internship.

Hospitals find themselves competing with each other to a certain extent for the available interns, because there are not enough medical graduates to supply all the hospitals that would like to have them for interns. The total output of medical colleges is around 4,500 graduates each year, whereas the hospitals already approved for intern training would absorb a total of over 6,000 if that many were available.

It appears that all of the ten hospitals approved for internships pay a nominal salary to their interns. Five of them pay $25.00 per month, including maintenance; four pay $50.00 and one pays $40.00. These are about the same rates of salary are paid in surrounding states.

All hospitals approved for intern training, those that are making application for approval, all the mental hospitals, and a number of others have been visited by the hospital examiners of the American Medical Association during recent months.

The teacher sent a note home by a little boy, asking that the mother give her son a bath. She even said that the child had an unpleasant odor in the class room.

The mother wrote: "Abbe ain't no rose. Don't smell him. Learn him."

"You remember when you cured my rheumatism a couple of years ago, Doc?" asked the patient. "and you told me that I should avoid dampness?"

"Yes, that's right," replied the doctor, approvingly.

"Well, I've come to ask you when I can take a bath."—Ex.

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MALARIA IN NEBRASKA FROM A CONTAMINATED HYPODERMIC SYRINGE

OLIVER C. NICKUM, M. D.
Omaha, Nebr.

The incidence of malaria in Nebraska is exceedingly rare and the following explanation of how one new case originated seems quite interesting for that reason.

This patient, Ben. R., age 37, was first seen January 17th on the outcall service at the University of Nebraska College of Medicine. The students were called to the patient's home following a chill that lasted approximately one and a half hours. The only complaint at the time of this visit was a feeling of extreme exhaustion and the patient was found to have a temperature of 102½. At this time there was quite a widespread epidemic of influenza and after a thorough physical examination had been made the students interpreted the chill to be evidence of the onset of this condition and prescribed accordingly. The patient slept reasonably well that night and remained in bed the following two days as he was directed. On the 20th they were asked to return to see the patient again because of a chill very similar to the first. At this time they requested a consultant to attend the case with them. At this time the patient gave a history of having had intermittent chills and fever occurring at regular intervals and beginning about 5 p. m. on each occasion throughout the past two months. The latter six weeks he had been a patient in the County Hospital and according to his statement malaria had been considered there with the result that several blood tests were made, giving negative findings. The differential diagnosis at that time was between dysentery, hepatic abscess, empyema and malaria. The patient left the County Hospital without being dismissed because of dissatisfaction with his progress. As malaria seemed most probable it was determined to make blood smears immediately, during this chill and at this time numerous organisms of the tertiary type were found. Previous to the report for the blood smears ten grains of quinine sulphate were given which shortened the length of this particular chill to about one-fourth the duration of those preceding.

The patient gave a history of having been in Omaha constantly during the past two years time and other history of illness was irrelevant to the present complaint. Examination of the forearms showed both basilic veins to be partially thrombotic, and the patient confessed to the use of morphine over the past six years. Questioned about other narcotic users who might have had access to his hypodermic equipment he gave the name of one individual who he said began a series of chills and fever resembling his own about three days after they had jointly used this equipment. A talk with the other patient who had been transferred to another hospital, brought out the fact that six years ago, while he was residing in old Mexico, he had received two courses of quinine therapy for what he described as only a mildly incapacitating illness and which he remembered to be chiefly made up of chills and fever and of feeling entirely well and able to work between these attacks. This incidence seems to make the more recently appearing case to be the source of infection and it is evident that the patient, Ben R., served to activate the plasmodium which had been injected into him by the contaminated needle enough so that when they jointly used the hypodermic equipment on a second occasion he was able to introduce an organism of increased virulence into the primary carrier which made his disease again active after having been quiescent over the past five years time. The patient, Ben R., was quite severely ill over the past two months whereas the other man has had but mild chills and fever.

There was recently reported at one of the hospital clinics another case of malaria definitely proven by the finding of the organism but which had had no contacts out of Nebraska over a period of five years and it was at that time entirely unexplainable where or how the infection was acquired. In view of the course of events in the two cases herein described, it might be that this latter case and others which occasionally have turned up in the past to torment us as to describing their etiology can be explained on the basis of transmission by hypodermic syringe.

COUNCILOR ANNUAL MEETING

JANUARY 23, 1933

The annual meeting of the Councilors was held at the Lincoln Hotel in Lincoln, January 23, 1933, at 2:00 p. m. The meeting was called to order by Dr. Lehnhoff. The following members of the Council were present: Drs. Overgaard, Lehnhoff, Boyer, Cook, Bryson, Rork, Selby, Cooper, Davis, King, Potter, Douglas and past-president Stark. In addition to these the following guests were also present: Dr. E. R. Hays of the Public Activities Committee; Dr. R. B. Adams, Secretary-Treasurer; Dr. K. S. J. Hohlen of the Campaign Committee; Dr. J. S. Welch, Chairman of the Committee on Medical Education and Hospitals; Dr. F. A. Long of the Journal Committee; Dr. A. F. Tyler of the Journal Committee and Dr. Herman Jahr, Secretary of the Omaha-Douglas County Medical Society.

Dr. Bryson was elected President and Dr. Overgaard re-elected Secretary for the ensuing year. The regular order of business was then taken up.

Dr. Lehnhoff retired from the chair and Dr. Bryson took the chair.

The minutes of the last meeting of the Council were read by Secretary Adams in the absence of Dr. Overgaard. Motion made that the minutes be approved as read. Seconded and carried.

The Secretary's report was read by Secretary Adams. Motion made that the report of the Secretary be received and placed on file. Seconded and carried.

The report on the Committee on Scientific Program was read by Dr. R. B. Adams. Motion made that this report be received and placed on file. Seconded and carried.

The report of the Committee on the Costs of Medical Care was read by Secretary Adams. Motion made that this report be received and placed on file. Dr. Selby stated that the Society at large should decide as to what the future conduct relating to these reports should be and also that the Council feels that they could not recommend at this time a definite action for the Society to pursue. This was further discussed by Drs. Rork, Overgaard, Douglas, King, Lehnhoff, Adams, Bryson, Stark, Potter and Davis. An amendment to the original motion was made that an invitation be extended to two qualified men in our

State Medical Association—one to talk on the Majority and the other the Minority. The motion as amended was seconded and carried.

Dr. Hays gave an oral report on the work of the Public Activities Committee during the year. Motion made that Dr. Hays' written report be received and placed on file. Seconded and carried.

Dr. Welch gave an oral report on the work of the Medical Education and Hospitals Committee. Motion made that Dr. Welch's written report be received and placed on file. Seconded and carried.

Dr. Selby read the report of the Insurance Committee for the year 1932. Dr. Overgaard made the motion that this report of the Insurance Committee be received and be transferred to the Medical Legal Defense Committee. Seconded and carried.

Dr. R. B. Adams gave the report of the Secretary-Treasurer. An auditing committee was appointed by President Bryson which was composed of Drs. Rork, Cooper, and Davis. The report of the auditing committee to be given at the evening session of this meeting.

The report of the Student Loan Fund was read by Dr. Overgaard. Motion was made that this report be referred to the auditing committee. Seconded and carried.

Report of the Sub-Committee was read by Secretary Adams. Motion made that this report be received and placed on file.

A letter was read by Secretary Adams from Dr. Leininger of the Southwest County Medical Society.

A letter received from the Omaha-Douglas County Medical Society and one from the Jefferson County Medical Society were read by Dr. Adams pertaining to the reduction of dues. Motion made that an amendment as follows be made to the motion concerning the budget for the year 1933: A Committee of three be named as a Ways and Means Committee to be appointed by the chair to investigate and make definite recommendations to this Council before its adjournment for a budget to recommend to the House of Delegates next May and to include in that a recommendation for the adjustment of the annual dues for the year 1933 of the State Medical Association. Seconded and carried.

President Bryson appointed the following committee as a Ways and Means Committee: Drs. Selby, Stark and Lehnhoff to confer with Dr. Adams as to this appropriation.

Motion made to adjourn until after dinner. Seconded and carried.

EVENING SESSION OF COUNCILOR MEETING JANUARY 23, 1933

Meeting called to order by President Bryson. The following members of the Council were present: Drs. Overgaard, Lehnhoff, Boyer, Cook, Bryson, Rork, Selby, Cooper, Davis, King, Potter, Douglas, ex-president Stark and president-elect Adolph Sachs. Dr. R. B. Adams, Secretary-Treasurer, Dr. E. R. Hays, Chairman of the Public Activities Committee, Dr. K. S. J. Hohlen, Chairman of the Campaign Committee; Dr. B. F. Bailey, Chairman of the Committee on Public Policy and Legislation; Dr. F. A. Long, Chairman of the Journal Committee; Dr. R. W. Fouts, Chairman of the Medical Legal Defense Committee; Dr. A. F. Tyler of the Journal Committee; Dr. Herman Jahr, Secretary of the Omaha-Douglas County Medical Society, and Mr. Gene Huse of the Huse Publishing Company were also present.

Dr. Bailey gave his report of the Committee on Public Policy and Legislation. Motion made that this report be received and placed on file. Seconded and carried.

Dr. Hohlen gave his report on the Campaign Committee. Motion made that this report be received and placed on file. Seconded and carried. The work of Dr. Hohlen was further discussed by Dr. Fouts.

Dr. Fouts gave his report on the work of the Medical Legal Defense Committee. Inasmuch as Dr. Fouts report was verbal a motion was made that the written report of Dr. Fouts' Committee be received and placed on file. Seconded and carried.

Dr. Fouts recommended that the Medical Legal Defense Committee be given one dollar per member this year from the General Fund instead of the two dollars which it has previously received.

The Auditing Committee reported that it found the Secretary-Treasurer's report correct and recommended that the reports be received. Motion made that this report be received and published in the Journal. Seconded and carried.

Motion made that within the next couple of years that a certified auditor audit the books of the State Association. Seconded and carried.

Dr. Stark read the report of the Committee on Ways and Means as follows:

To the Board of Councillors,
Nebraska State Medical Association.
Gentlemen:

We, your Committee on Ways and Means appointed by the Chairman of the Council to devise methods for reducing the expenditures authorized by the present budget, beg leave to report the following:

We ask that the Secretary of the State Association be instructed to notify each County Secretary that he may arrange for the payment of dues according to this report, that is $5.00 per year per member and that any member having paid his dues is entitled to a refund of $3.00. This reduction to take place immediately and be in force until the next meeting of the House of Delegates for their action on the same.

After careful study of the expenditures for the year just past, we recommend a reduction in the salary of the Secretary, received from the Journal Fund, of $400.00. The former salary of $1,300.00 was used to pay his office help and some miscellaneous expenses coming to his office. The $900.00 now remaining in that item will be used to pay the office help only.

Dr. Roy W. Fouts appeared before the Committee and stated that for this year he would be able to reduce the amount paid to the Legal Defense Committee to $1.00 per member instead of $2.00 per member as formerly. Based on the membership of last year, this will effect a saving to the General Fund of approximately $1,100.00.

We also recommend that for the ensuing year, we dispense with the appropriation for the Committee on Public Activities, which will, based upon their expense for last year, effect a saving of approximately $2,500.00. This is a measure that we regret to have to take but our recommendation is for this year only.

By making the above deductions from the budget for this year which total, depending upon membership, approximately $3,980.00, we can put the dues of each member to the State Association at $5.00 per year which we feel is a substantial reduction and is as great as we can make at this time. We also feel that our component County Societies can see that the effort to economize is being made and that a reduction in State dues of three dollars per member per year will materially assist in maintaining our membership at its present point.

Respectfully submitted,
Lucien Stark,
C. A. Selby,
H. J. Lehnhoff.

Motion made that this report be recommended for adoption by the House of Delegates at its next annual meeting. Seconded and carried.

Dr. Rork made the motion that the Delegates of the Nebraska State Medical Association petition the House of Delegates of the American Medical Association to reduce the subscription to the Journal of the American Medical Association and also the Fellowship to the American Medical Association from $7.00 to $5.00 per year. Seconded and carried.

Dr. Long gave the report of the Journal Committee. Motion made that the report of the Journal Committee be received with favorable recommendation of the Council and placed on file. Seconded and carried.

Motion made that the meeting adjourn. Seconded and carried.

SECRETARY'S REPORT

The Nebraska State Medical Association finished the year 1932 with 1083 members having paid their dues. This was a decrease of 111 members over the year 1931. In 1931 there were 1194 members in good standing. This decrease was not as much as the Secretary feared it would be. During the year special efforts, letters to County Secretaries and the members individually were sent out to a greater number than in previous years. What effect this had on the membership, of course, it is impossible to estimate.

The Annual Meeting was held in Lincoln, May 24th, 25th and 26th, 1932. The attendance was good considering general conditions. The program was at least on a par with those given previously.

The usual health week which for several years has accompanied the meeting as part of the work of the Public Activities Committee was omitted. This Committee, however, did hold its annual program at the State Fair with its usual big success. Contact with numerous social and welfare organizations was kept up by the Committee as of former years.

All other Committees did their usual good work. The Insurance Committee ran into difficulty with the United States Fidelity and Guaranty Company which cancelled its policy with the Association. The Committee used everything in its power to prevent this to no avail.

The Medical-Legal Defense Committee handled its work in its usual highly efficient way, keeping expenses in particular to a minimum.

During the year the Journal cost $420.44 less than in 1931. $1,076.58 more was spent than was taken in, making it necessary to withdraw some of the Association investments in this fund.

The General Fund spent $84.18 more than in 1931. This was due to the guests at the meeting costing more and due to the letters made necessary by the cancellation of our group policy against mal-practice suits. From this fund was spent $950.32 more than was collected. Due to the fact that slightly more than this amount was on deposit from previous years it was not necessary to withdraw any reserve for this fund.

The Secretary calls attention to these things for two chief reasons. It seems to him that 1933 will probably be a more serious year than 1932. More members will be lost and our budget for the year 1933 has been adopted for the year. It will be necessary in the opinion of the Secretary to decide what must be done. Shall we curtail activities drastically? Shall we make up all of our deficit for the coming year from our investments or shall we do both? This report is made asking that the Council give it serious consideration.

—R. B. Adams, Secretary.

REPORT OF THE COMMITTEE ON JOURNAL AND PUBLICATION FOR 1932

During the year 1932 the Nebraska State Medical Journal published a total of 548 reading pages—the equivalent of about one additional number of the Journal. Ordinarily we attempt to hold the number of pages each month to forty. Unusual conditions sometimes arise to compel the addition of four or eight pages to a few numbers, such as when the index, title page and list of membership are published in the December number.

An unusual quantity of material the past year prompted the addition of more pages. This seemed the easier because our contract calls for a Journal of 64 inside pages and four cover pages and since the advertising dropped to about sixteen pages we felt freer to add more reading pages.

If all contract space is not used we get a short rate credit, which in my eagerness to publish, I overlooked for some months.

The report of the secretary-treasurer indicates that our advertising for 1932 amounted to $1,278 less than it did for 1931. The report further shows a membership 99 less than for 1931, which gave the Journal Fund $148.50 less membership subscription money. These two items of loss to the Fund amount to a total of $1,426.50.

The membership as reported to me by Secretary Adams a short time ago for 1932 was 1,083. It had dropped from 1,182 the year before. We may then reasonably expect a further drop for 1932 of, say 83, leaving us around 1,000 members for the current year. Our budget must be predicated on that basis.

We have agreed on some economies for the immediate future in order to keep within a reasonable budget and at the same time keep the Journal to the same high standard we like to see.

By keeping the reading matter in the Journal down to the minimum during the year we feel that we can save the equivalent of approximately $299 for the year.

We furnish three cuts to any article in the Journal free of charge. A copper halftone 2½x3½ costs about $4.10. We have been using copper halftones in the Journal, but find that zinc cuts will probably serve the purpose almost as well and have decided to use zinc cuts for this year. Zinc cuts are about half the price of the copper ones and we will in this way save about $112.

The past year we withdrew $606.86 from investments and propose to continue the withdrawals from the Building and Loan Associations during the coming year.

Mr. Gene Huse of the Huse Publishing Co., voluntarily offers to reduce the 1933 expense of publication of the Journal by seven and one-half percent for one year which will amount to approximately $305.64 for the year.

Dr. R. B. Adams has agreed and requested that the amount paid him as business manager and out of which he hires his office assistant, be reduced to just the amount to be paid the office assistant, which will save another $400.

If granted $1.50 per member as previously we will be able to balance accounts and run without much loss to the Journal Fund.

F. A. LONG, Chairman and Editor.

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1932 to December 31, 1932

Cash Receipts:		
Membership Dues	$8,568.00	
Nebraska T. B. Assn. payment for guest at State meeting	4.10	
Total Cash Receipts		$8.572.10
Cash Transferred to other Funds:		
Journal Fund	$1,606.50	
Defense Fund	2,142.00	
Total Cash Transferred		$3,748.50

Balance Available for General Fund		$4,823.60
Cash on Hand January 1, 1931		1,077.26
		$5,900.86
Cash Disbursements:		
Salaries—R. B. Adams		$ 600.00
Office and Administrative Expense:		
Rent	$ 180.00	
Telephone	88.44	
Printing	114.68	
Bank Charge	5.20	
Government Check Charge	.92	
Stamps	97.40	
Postage for letters in re Group Insurance	32.46	
Secretary of State	1.00	
Insurance Premium	5.00	
A. M. A., cards, directories and application blanks	21.00	
Dr. F. A. Long—expense	77.75	
Madison News (Dr. Long for stationery)	5.50	
Mutigraph Letter Shop	7.14	
White House Conference	15.00	
		655.99
Miscellaneous Expense:		
Councilor Expense	$ 366.01	
Huse Publishing Co., Programs	52.50	
Program Committee	15.00	
Speakers at Meeting	224.54	
Campaign Committee	500.00	
State Fair	539.50	
Public Activities Committee	883.68	
Dr. E. R. Hays, Salary	1,000.00	
Student Loan Fund	500.00	
Omaha National Bank, Share of Court Cost and Att. Fees 1930 and 1931 Taxes and Ins. Prem. on Mortgage of Zannie X. Marshall	21.94	
Flowers (Hildreth, Shaw & Malster)	23.00	
Epply Hotel—Expense of Speakers	18.10	
		4,144.27
Convention Expense:		
R. W. Fouts	$ 88.11	
B. F. Bailey	83.18	
J. Stanley Welch	55.37	
Alice Cary Gilchrist	147.00	
		373.66
Total Disbursement for Year 1932		$5,773.92
Balance Cash on Hand December 31, 1932		$ 126.94

GENERAL FUND

STATEMENT OF INVESTMENTS

January 1, 1932 to December 31, 1932

Investments on Hand January 1, 1932:		
Cash Held by Omaha National Bank	$ 154.07	
Securities Held by Omaha National Bank	4,770.00	
		$4,924.07
Balance in Account—Omaha Loan and Bldg. Assn.		1,596.16
Balance in Account—Conservative Savings & Loan Assn.		3,130.20
Balance in Account—Nebraska Central Bldg. & Loan Assn.		1,840.08
Balance in Account—United Savings & Loan Assn.		1,140.19
		$12,630.70
Additions to Investments During Year 1932:		
By: Interest Credits—Omaha National Bank	$ 115.74	
Dividend Credits — Omaha Bldg. & Loan	60.39	
Dividend Credits — Conservative Sav. & Loan	134.45	
Dividend Credits — Nebr. Central Bldg. & Loan	74.34	
Dividend Credits—United Savings & Loan	17.10	
		402.02
		$13,032.72
Withdrawals During Year 1932:		
Trustee Fee Year Ending January 1, 1933		10.00
Investment on Hand January 1, 1933		$13,022.72
Represented by:		
Cash Held by Omaha National Bank	$ 259.81	
Securities Held by Omaha National Bank	4,770.00	
		5,029.81
Balance in Account—Omaha Bldg. & Loan Assn.	$1,656.55	
Balance in Account — Conservative Savings & Loan	3,264.65	
Balance in Account—Nebraska Central Bldg. & Loan	1,914.42	
Balance in Account — United Savings & Loan Assn.	1,157.29	
		7,992.91
		$13,022.72

DEFENSE FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1932 to December 31, 1932

Cash Receipts:		
Share Dues Received from General Fund	$2,142.00	
Cash on Hand January 1, 1932	2,124.73	
		$4,266.73
Cash Disbursements:		
R. W. Fouts, Salary	$ 600.00	
Attorney Fee:		
Gaines, McGilton, McLaughlin & Gaines (opinion in re appointment)	15.00	
R. W. Fouts, Expense	155.27	
Government Check Charge	.12	
Total Cash Disbursements		$ 770.39
Investment—Omaha National Bank		2,000.00
Total Disbursements for the Year 1932		$2,770.39
Balance on Hand December 31, 1932		$1,496.34

DEFENSE FUND

January 1, 1932 to December 31, 1932

Investments on Hand January 1, 1932:		
Cash Held by Omaha National Bank	$ 33.84	
Securities Held by Omaha National Bank	3,000.00	

Balance in Account—United Savings & Loan	1,140.19	
Total January 1, 1932		$4,174.03
Transferred from Checking Account for Investment:		
To Omaha National Bank	$2,000.00	
Interest Credited During Year:		
Omaha National Bank	$ 213.99	
United Savings & Loan Assn.	17.10	
Addition to Investments:		
Fourth Liberty Bond, Bought at 99 for $1,993.37—Value	$2,000.00	
Balance on Fourth Liberty Bond	6.63	
		6,411.75
Cash Transferred:		
Trustees Fee for Year Ending December 31, 1932	$ 10.00	
Interest Accrued on Fourth Liberty Bond	25.03	
		35.03
Investments on Hand January 1, 1933		$6,376.72
Represented by:		
Cash Held by Omaha National Bank	$ 219.43	
Securities Held by Omaha National Bank	5,000.00	
Balance in Account—United Savings & Loan	1,157.29	
		$6,376.72

JOURNAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1932 to December 31, 1932 as Compared to January 1, 1931 to December 31, 1931

	1932	1931
Direct Journal Receipts:		
Advertising Space	$3,766.48	$5,044.63
Cuts	111.48	122.69
Copies Sold	28.19	8.05
Subscriptions to Journal	14.50	25.00
Dividend—Cooperative Adv. Agency	223.38	380.66
Dr. E. R. Hays, for Printing		5.00
Total Direct Receipts	$4,144.03	$5,586.03
Share Dues Rec'd—General Fund	1,606.50	1,773.00
Withdrawal:		
Omaha Bldg. & Loan Assn.	332.09	
Union Savings & Loan Assn.	210.69	
Standard Savings & Loan	64.08	
	$ 607.86	
Total Receipts—All Sources	$6,358.39	$7,359.03
Direct Journal Disbursements:		
Salaries:		
Dr. F. A. Long	$1,200.00	$1,200.00
Dr. R. B. Adams	1,300.00	1,300.00
	$2,500.00	$2,500.00
Publication Expense:		
Huse Publishing Co.	$3,909.64	$4,519.72
Baker Brothers Eng. Company	373.73	181.89
Bank Charge	1.23	3.95
Government Tax Charge	.52	
Universal Press Clipping Bureau	42.00	42.00
	$4,327.12	$4,747.56
Total Direct Disbursements	$6,827.12	$7,247.56
Excess Disbursements Over Cash	$ 468.73	
Excess Cash Over Disbursements		$ 111.47
Cash on Hand January 1	544.50	433.03
Total Cash on Hand	75.77	544.50

JOURNAL FUND

STATEMENT OF INVESTMENTS

January 1, 1932 to December 31, 1932

Investments on Hand January 1, 1932:			
Balance in Account—Omaha Loan & Bldg. Assn.			$3,068.72
Balance in Account—Standard Savings & Loan			1,281.67
Balance in Account—Union Savings & Loan			2,106.97
Balance in Account—United Savings & Loan			1,140.19
Balance in Account—Omaha National Bank			315.77
Total January 1, 1932			$7,913.32
Additions to Investments During Year:			
Represented by:			
Dividend Credit—Union Loan & Savings Assn.:			
July 1, 1932	$37.93		
December 31, 1932	29.01	$ 66.94	
Dividend Credit—Omaha Loan & Bldg. Assn.:			
July 1, 1932	$55.91		
December 31, 1932	37.38	93.29	
Government Bonds—Omaha National Bank:			
Transfer from Omaha Loan & Bldg. Assn.	$306.87		
Government Bond Purchased at 99 for $299.00, value	$300.00		
Balance on Bond	7.87		
Interest	12.75		
Interest on Bonds Formerly Purchased	11.05	331.67	$ 491.90
			$8,405.22
Cash Transferred:			
Interest accrued on Bond		$ 3.76	
Withdrawals:			
Omaha Loan & Bldg. Assn.		306.87	
Loan to Journal Fund Checking Acct. to Balance Withdrawal as of Jan. 1, 1933		332.09	
Standard Savings & Loan		64.08	
Union Loan & Savings		210.69	$ 917.49
			$7,487.73
Transferred to Journal Fund Checking Account:			
Omaha Loan & Bldg. Assn.		$332.09	
Standard Savings & Loan		64.08	
Union Loan & Savings		210.69	$ 606.86
Total Dividend Credits During Year and Interest			$ 184.03
Total Amount Transferred to Journal Fund Checking Account			606.86
Investment During Year — Omaha National Bank			300.00
Investments on Hand January 1, 1933.			
Balance in Account—Omaha Loan & Bldg. Assn.			$2,523.05
Balance in Account—Standard Savings & Loan			1,217.59
Balance in Account—Union Loan & Savings			1,963.22
Balance in Account—United Savings & Loan			1,140.19
Balance in Account—Omaha National Bank — Investments		$600.00	
Cash on Hand		43.68	643.68
			$7,487.73

STATEMENT OF JUST WHAT WAS DONE WITH EACH MEMBER'S $8.00 DURING 1932

Share of Dues to Journal Fund	$1.50
Share of Dues to Defense Fund	2.00
Dr. R. B. Adams (salary)	.5602
Office and Administrative Expense:	
Rent	.1680
Telephone	.0825
Printing	.1070
Bank Charge	.0048
Government Check Charge	.0008
Stamps	.0909
Postage for letters in re Group Insurance	.0303
Secretary of State	.0009
Insurance Premium	.0046
A. M. A., cards, directories and application blanks	.0102
Dr. F. A. Long—expense	.0726
Madison News (Dr. F. A. Long for stationery)	.0051
Multigraph Letter Shop	.0067
White House Conference	.0140
Miscellaneous Expense:	
Councilor Expense	.3417
Huse Publishing Company—Programs	.0490
Program Committee	.0140
Speakers at Meeting	.2096
Campaign Committee	.4669
State Fair	.5032
Public Activities Committee	.8251
Dr. E. R. Hays, Salary	.9337
Student Loan Fund	.4669
Omaha National Bank, Share of Court Cost and Attorney Fees, 1930 and 1931 Taxes and Ins. Prem. on Mortgage of Zannie X. Marshall	.0205
Flowers (Hildreth, Shaw & Malster)	.0214
Epply Hotel—Expense of Speakers	.0169
Convention Expense:	
R. W. Fouts	.0822
B. F. Bailey	.0776
J. Stanley Welch	.0517
Alice Cary Gilchrist	.1372
	$8.8762

We spent $950.32 more than our income this year which was taken care of by money on hand in the bank, that is why the total expense is $0.8762 more than the $8.00 for dues.

MISCELLANEOUS VETERANS' BILLS BEFORE CONGRESS

Two bills provide compensation for veterans suffering from injury or disease due to wilful misconduct. Another bill provides compensation of not less than $50 a month for a veteran who has been found by the Veterans' Administration to have had active tuberculosis, which finding had not within six months thereafter been rebutted by hospital observation, and who in the judgment of the Administrator of Veterans' Affairs has reached a condition of complete arrest of his disease. Another bill proposes to provide "adequate compensation and treatment for the veterans having a tubercular disease." Under the provisions of another bill, allowances would be granted to dependents of veterans while such veterans are hospitalized. Two bills propose to liberalize the disability allowance for veterans of the World War suffering from disabilities contracted in civil life. Every honorably discharged veteran of the Spanish American War, the Philippine insurrection and the Boxer rebellion would be furnished with such governmental medical, surgical and hospital services as may be required, including medicines, serums and surgical supplies, under the provision of another bill. A Senate bill provides that any ex-service man shown to have had a tuberculous disease of a compensable degree for a period of five or more consecutive years, and whose disability on account of such disease during such period has been rated as total and temporary, shall be held to be totally and permanently disabled for all purposes under the World War Veterans' Act. Retired enlisted men of the Army, Navy or Marine Corps, Coast Guard and enlisted men transferred to the Fleet Naval and Marine Corps Reserve would be granted equality in domiciliary care under the provision of a House bill. Two bills propose to amend the World War Veterans' Act to provide, among other things, that in considering claims the Veterans' Administration shall accept the statements of "lay physicians" as true until such statements are proved false and shall give the same weight to such statements as is given to statements made by physicians attached to the Veterans' Administration. Additional compensation for World War veterans for the loss of the use of an eye in active service in line of duty is proposed under the provisions of another bill. The Bureau of Mines, under the provision of a bill, would be authorized to manufacture radium for the Veterans' Administration. Two bills propose to define the term "wilful misconduct," as used in the World War Veterans' Act, to include only intentional self-inflicted injuries or conduct engaged in for the purpose and with the intent of developing and causing injury or disease, or aggravation thereof, or causing recurrence of disease. Another bill provides additional compensation for veterans entering service prior to Nov. 11, 1918, who suffered the loss of "the use of a creative organ or one or more feet or hands as the result of personal injury received or disease contracted in active service in line of duty after April 6, 1917, and before discharge from the service." The World War Veterans' Act would be amended by another bill to require only sixty instead of ninety days service during the World War to entitle a veteran to a pension for a disability incurred in civil life. See also H. R. 388, H. R. 4577 and S. 1690, discussed under the main heading "Miscellaneous Bills."—*A. M. A. Bulletin.*

The Nebraska State Medical Journal

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COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman..........Madison
A. F. Tyler..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex Officio..........Lincoln

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DEPRESSION, DUES AND DUTY

There has never been a time when there was greater need for medical organization than today—there has never been a time when there was greater need for every one to maintain his membership in the Nebraska State Medical Association, intact. These are trying times and dollars are not abundant and there are many places where the dollars can be placed to advantage; but there is no place from which a physician may expect greater benefit than by paying his membership dues to his medical society. There is not a physician in Nebraska who does not in some way fritter away, foolishly, every year more than the amount of his medical society dues.

The state society dues have now been reduced to five dollars—the price of a ten-cent or two five-cent cigars a week, a dime's worth of chewing gum a week! Shame on those who say they cannot! Of course, it can de done: it must be done!

The world is not going to come to an end and better times are ahead. Some of us are old enough to have outlived several severe depressions.

The editor has too much faith in the general good sense of the medical profession to believe the physicians will not rise to the occasion.

ACCREDITING SPECIALISTS AND CONTROLLING SPECIALISM BY STATE SOCIETY

Every member of the profession realizes the need of defining and regulating specialists. Today any physician who passes the state board is a potential specialist and may herald himself as such and there is no law to stop him from practicing as a specialist, no matter what his special qualifications, or lack of qualifications may be.

A number of plans have been suggested for the regulation of specialism by law and now a plan comes from New Jersey known as the Waters Plan which proposes that specialists and specialism be regulated by the state medical society by a method of accrediting. The method would have no legal status, but would function by the standard of recognition accorded by the society. The National Board of Medical Examiners has no legal status, but is everywhere recognized as an authoritative body, because of its known high standards. An outline of the plan follows:

State Society Committee. For the purpose of putting this plan into effect and of continuing its application and enforcement during the next 3 to 5 years, a special committee shall be appointed, to be known as the Committee on Credentials of Specialists, to be composed of the President and Secretary, and the Chairman of the Welfare Committee, Chairman of the Board of Trustees, and First Vice President. Said committee shall be empowered to call into conference from time to time, as may be desirable, one or more specialists from the State Society's list, to serve the committee in an advisory capacity while dealing with the scientific credentials of the candidate for recognition. This special committee shall have, further, authority to pass upon all such personal attributes, and set up such educational requirements as may be deemed necessary. The presence of 5 members shall be required at meetings for consideration of candidates. In the event that any member of the committee is removed by death, or resignation, the Board of Trustees shall fill the vacancy thus created.

County Society Committee. Each component county medical society shall set up a similar Committee on Special Credentials for a period of 3 to 5 years, composed of its President and Secretary and 3 other members to be elected by the county society.

METHOD OF PROCEDURE

In County Society. Any member of a component county medical society. desiring recognition and certification of himself by the Medical

Society of New Jersey, will make such application to the Secretary of his county society, on blanks to be provided by the State Society, and present therewith such documents and evidence of what-so-ever sort he may think entitles him to listing as a specialist in his chosen line of medical practice.

The said county society Secretary will then present the application and all of its supporting testimony to the County Society Committee on Special Credentials; and, if and when that committee—after careful consideration of the material submitted, and such further investigation as the committee may see fit to make concerning the applicant's moral character, professional conduct, educational background (general and medical), experience in the general practice of medicine, and general fitness to enter or remain in the field of Specialism—shall have given its approval to the application, the said Secretary shall at once forward that application, with the committee's endorsement attached (together with a copy or copies of all documents and records of information, upon which the county committee based its decision), to the Secretary of the State Society. Four members of the county committee shall constitute a quorum.

In State Society. Upon receipt of such an application, the State Society Secretary shall present it (and he may attach there-to any additional information, suggestions or recommendations believed by him to be germane to the question) to the State Society's Committee on Credentials of Specialists, and, after due consideration of all information at hand or readily available, that committee shall determine whether the candidate is worthy of recognition, as a Specialist, by the State Society, and shall forward its recommendation to the Secretary of the State Society, at least 30 days prior to the next regular Annual Meeting.

In the event that an applicant for recognition as a specialist is rejected by the county society committee; or, if that committee has not rendered a decision as to approval or rejection within a period of 1 year; and the applicant feels that he has not been treated fairly, he may appeal to the State Society, through its Secretary, and request that his application and its supporting evidence be taken from the county society and considered by the corresponding State Society Committee.

Decisions of the State Society Committee upon such appeals and also upon adverse decisions of its own, when dealing with applications endorsed by the County Committee, shall be final, unless otherwise determined by the Trustees or House of Delegates of the State Society.

The deliberations and findings of the State and County Committees shall be the property of the State Society Committee.

QUALIFICATIONS

(1) A candidate must be known to and recognized by his professional associates as an honest, conscientious and ethical physician.

(2) Fellowship in the American College of Surgeons, or Fellowship in the American College of Physicians; or a diploma from one of the National Examining Boards—ophthalmology, otolaryngology, obstetrics and gynecology; membership in the American College of Radiology, or the Radiologic Society of North America; or membership in the American Psychiatric Society; will be considered a favorable recommendation.

(3) Members of the Medical Society of New Jersey holding appointments on a hospital service, in a special branch of medicine or surgery or any of the recognized specialties, whose service is sufficiently active to afford attainment of a high degree of proficiency; and the duration of whose appointment has been at least 5 years; will be deemed worthy of consideration.

(4) Those who may later receive, from recognized colleges or other teaching institutions, certificates showing completion of postgraduate courses of instruction leading to the degree of "Master" in any branch of medicine or surgery.

(5) Evidence of continuous, active, successive practice during at least 10 years, marked by study, travel, active membership in medical societies, and proof of special ability in their chosen fields of practice.

CERTIFICATION

(1) The certification as specialist in any given branch of medicine or surgery shall be awarded at the Annual Meeting of the State Medical Society, in such manner as may hereafter be determined by the State Society Committee on Credentials and the Board of Trustees.

(2) A suitably engrossed Certificate, carrying the seal of the State Medical Society, and subscribed to by the State Society Committee on credentials, shall be issued to all approved applicants.

(3) The State Society, upon the advice and request of the State Society Committee on Credentials, may distribute the lists of Approved Applicants and Certified Specialists in such places and manner as may seem desirable for the effectiveness of this plan.

(4) To defray the cost of certification and certificate, a charge of $25 shall be made, payable before the certificate of qualification as a specialist is issued.

The State Society Committee reserves the right to revoke any certificate issued, upon proof being shown that fraud or misrepresentation was used in obtaining certification.

COUNCILORS INAUGURATE DRASTIC ECONOMIES

The annual councilor meeting held at Lincoln, January 23, and reported in this number inaugurated some drastic economics for the ensuing year. A saving of approximately $4,000 is foreseen. The annual dues was reduced from $8.00 to $5.00, which will strike a unanimous responsive chord in the profession. Drastic economies were inaugurated affecting the public activities committee, the medical defense committee and the publication board. It is proper to state at this time that the publication board worked out its own problem and presented the result to the councilors for approval.

The *Journal* will be held to approximately forty pages of reading matter monthly for the ensuing year. During the past year the vast amount of material required many additional pages: economic conditions will require a stricter censorship of the material offered for publication, to keep within the limits prescribed.

Every one will be well repaid by reading the report of the councilors meeting page 104.

PLANS FOR NEBRASKA CONFERENCE ON CHILD HEALTH

Within the next year Nebraska expects to hold a conference which will discuss the results of state wide surveys on child needs in this state.

The needs of the child will be discussed from various viewpoints, medical, educational and sociological.

The pediatric section has now been partially organized and is proceeding with surveys. It is the desire of this section that every medical man in the community be enlisted in this work.

The first problem to be solved is to make a complete survey of the needs of the child in various communities.

Questionnaires will be sent out and it is hoped that each physician receiving one will take the time and interest to answer the questions as accurately as possible.

The value of the survey depends entirely upon the coöperation of the medical profession. After the survey has been made and the needs of the children definitely determined, plans will be discussed for meeting these needs in a way most beneficial to the children, the medical profession and the community at large.

With the present trend among various lay organizations to try out all sorts of bizarre experiments in the medical field it is necessary for the medical profession to endeavor to have a controlling hand in the development of these plans.

We as physicians want every child in the state to be assured of the benefits of the best in medical practice. To do this we must know what is needed and make our plans accordingly.

—Clyde Moore, Omaha.

SOCIAL INSURANCE: COUNTER-SUGGESTIONS

The medical and dental professions of this country are giving the American public the best all-round health services ever enjoyed by any nation and are on the whole serving the nation as well or better than any other group of men. These two professions have a very general and most intimate contact with the citizens of the nation. No other professions are in so favorable a position to exert so great an influence for good as are these two if they will but use their opportunity rightly and wisely. If they are to accomplish the greatest possible good they must make still closer contacts with and exert still greater influence upon the political, social, and ethical life of the nation. These professions as a whole and as individuals must strive unceasingly and untiringly, in the future as in the past for still further improvements in their respective fields. If unhampered by lay bureaucratic supervision and control in the future as they have on the whole been in the past we have every assurance that they will proceed to new and greater achievements: if, on the contrary, unduly hampered, we have every reason to expect medical service to deteriorate and medical progress to cease as it has already done in those countries whose governments have interfered the most.

In order to maintain the high standard of medical services prevailing, the professions must insist that the governments of the various states maintain high standards of requirements for admission to the practice of the professions. In order to accomplish this, continued education of the public in this regard is necessary.

The organized professions through their proper local organizations must see to it that all undesirables are weeded out and that the individual members render efficient service for adequate and yet reasonable fees. The professional man who makes unreasonably exhorbitant charges for his services is even a greater menace to private practice than is he who charges too little. The former is the one to blame for most of the antagonism and resentment among the laity, while the latter because of his unfair competition makes it difficult for his colleagues to secure the necessary means for graduate work so essential to growth and progress.

Having presented to the attention of my readers through these articles the defects of Social Insurance as practiced at present in foreign countries and also having shown the dangers of such a system if allowed to become fixed upon the American Citizen, I offer as counter-suggestions that the government instead of wanting to take over new functions and new powers would do better were it to make every effort to perform acceptably the duties with which it now is entrusted. We of the medical and dental professions insist that the government give better medical services to its prisoners, delinquents, insane, paupers and government wards in general; that it give more serious attention to sanitation and hygiene, particularly to ventilation of public conveyances and places where large numbers of people congregate, and to the prevention of pollution of our sources of community water supply such as lakes and rivers.

The allied professions in conjunction with the government should give more serious attention to the teaching of personal hygiene in our schools, colleges and universities. Our educational institutions should teach the rising generation the value of integrity, industry, thrift and frugality, and that there is no substitute for these not even legislation. Teach them that trying to keep up with the Joneses is not necessarily a virtue and that the installment buying of luxuries and trying to keep ahead of the Browns is poor business. Teach them that to learn how to get one's money's worth and to acquire a competence are much more worth while. Teach them that trying to get something for nothing, particularly through gambling, whether it be crap-shooting, poker, or buying stocks on margin, is fundamentally dishonest and almost invariably leads to disaster.

Better provisions for safe-guarding the savings of our workers should be made and if there is no way of accomplishing this, there should be established a compulsory government insurance against sickness whereby the individual worker pays for his own insurance, in other words, separate entirely medical services and cash benefits. The physician should under no circumstances be medical advisor and insurance adjuster as he is in fact in all systems of Compulsory Health Insurance now in vogue.

Social Insurance is man's latest attempt at finding a means whereby social justice may be attained. But like all panaceas so far advanced it is sure to make conditions worse rather than better. The first and most important thing to do is to secure honest and efficient government and this cannot be accomplished until the general standard of honesty has greatly improved which is simply another way of saying that there is no substitute for character of the individual members which make up a nation.

Finally, devise means and methods whereby remuneration and reward shall be in direct proportion to time and energy legitimately expended and to the value of services rendered to society.

While the underlying purpose of Social Insurance is to secure the more equable distribution of wealth and to employ the weapon of taxation in order to secure the necessities and comforts of life to the poor at the expense of those with larger incomes, the system is of necessity a failure because it does not conform with the foregoing fundamental principle of justice but instead rewards the inefficient at the expense of the efficient; the lazy, shiftless and immoral at the expense of the industrious, thrifty and moral. While it is unquestionably true that certain individuals have been and are still receiving money for which they have not rendered an equivalent service to society, trebling and quadrupling and even tenfold the number of these parasites does not correct the evil. The remedy must be much more fundamental.

This formula will require the best brains of the country for its practical application, but I am firmly convinced that it is the only formula that offers a practical solution to our social and economic ills not only of the allied professions but of society in general. If it is followed those members of society who are doing the world's work will have enough money to employ capable dentists and physicians of their own choice and will then be assured adequate and health service.

—Edward H. Ochsner, Chicago.

Teeth are things you have out just before the doctor decides it was your tonsils, after all.—Houston Chronicle.

OUTSTANDING PIONEER OBSTETRIC EXPERIENCES—PATHETIC, HUMOROUS

Confinements in Stable and Dugout

Case I.: Early one morning in 1892, I was called to a case of obstetrics east of Newman Grove, and when I arrived at the home I found that they lived in a dugout, a house partly underground, poorly ventilated, poorly lighted.

The lady was in the first stage of labor but the pains were few and far between. The family were new-comers in that part of the country and said that they did not like to ask any of the neighbor ladies in to assist them, but if I would remain the man would drive to Platte Center, and get the lady's mother to come and help out during her sickness, it being 25 miles to Platte Center, making a drive of fifty miles. I could see that I would be tied up there for the whole day. I consented and the husband started on his long journey.

By the middle of the afternoon the lady's pains began to get quite regular and the pains in my epigastric region became very annoying and I made bold to open the cupboard to see if it contained anything to sustain a hungry man; but to my surprise it was as empty as Old Mother Hubbard's cupboard.

Early in the day I had noticed some chickens scratching around the door of the dugout and now, with nothing in my stomach and murder in my heart, I slipped out between pains and succeeded in laying one of these chickens out with a club. After removing most of the feather I dissected it and soon had a chicken in the pot. Late that night the baby was born, and soon after the father and grandmother returned from Platte Center, and we all feasted on the chicken and all declared it was some feast.

Case II: Late in October, of the year 1894, I was called into the hills of Boone county, to attend a case of confinement. The messenger accompanied me on his pony, and directed me to his newly constructed home, which seemed to me to be mostly straw sheds.

Tying my team to an empty wagon I asked him to show me where the house was. He said "follow me" and took me into one of the stables. On one side of a manger that extended through this crude home lay a woman in childbirth and on the other side of the manger were several cows contentedly chewing their cuds.

There was a sort of a partition between these two compartments but it was really one. There was no floor except a dirt floor. In due time a baby was born, and with the exception of a profuse post partem hemorrhage, no other unfavorable symptoms developed.

—**F. L. Frink, Newman Grove.**

ALLERGY HINT NO. I

Negative skin tests do not disprove the presence of an allergic state. Nor do positive tests always point out the cause.

—**Edw. S. Maloney, Omaha.**

TUBERCULOSIS HINT NO. V

Should the patient eat between meals? There is no rule. He should eat a varied, well-balanced diet including all the dietary elements, and amounting to between 2,000 and 3,000 calories per 24 hours. Anyway he can get this into himself will do. But many have to eat between meals because the atony of the gastro-intestinal tract will not handle large quantities of food at one time.

—**Miles J. Breuer, Lincoln.**

MEDICO-LEGAL DISABILITIES NO. VII

In the consideration of an accidental injury of a claimant where restrictions are made to "accidental means" in which the cause is unusual, unforeseen, or unintended, "the cause" is the deciding element, and it makes no difference whether the act was intentional or not if the cause of the injury was unintentional, unusual or unforeseen.

—**Czar Johnson, Lincoln.**

EDITORIAL PARAGRAPHS

The Nebraska Department of Public Welfare licensed 2,126 medical practitioners in 1932.

The University of Nebraska College of Medicine has received the sum of $1,500 from the Merrell company for research in allergy.

The city-county health council suggested by Dr. L. L. Lumsden of the United States Public Health Service has been organized at Omaha.

Physicians desiring the present papers before the annual meeting in May should at once notify Dr. R. B. Adams, Secretary, Center McKinley Bldg., Lincoln, Nebr.

It is the common failing of old men to attribute all wisdom to themselves.—Fielding. And a commoner failing of younger men to assume they knew more than their fathers.

In the February Journal, in the Dr. J. E. Summers article "Prognosis in Surgery of the Abdomen, etc.," in the first column, beginning of third paragraph the name "Emperor" was inadvertantly used when "President of Germany" was intended. Perfection is no trifle.

It is but proper to state—to correct a possible misunderstanding—that out of the salary paid the business manager, heretofore, he had to pay the office clerk and stenographer in his office of business manager and secretary-treasurer.

Thirty health lectures have been prepared by the members of the speaker's bureau of the Omaha Chamber of Commerce and are available for noonday luncheon clubs, meetings of employes in industrial plants, teachers' meetings, parent-teacher associations, Y. M. and Y. W. C. A.'s educational and scientific groups, and church organizations. Much good should result from such a movement, properly sponsored as this must be.

An esteemed correspondent writes that on receiving notice that his dues would be delinquent if not paid by February first, asked a farmer for ten dollars so he could pay his obligation to the medical association, whereupon the farmer produced the following amazing figures:

1 300 pound hog (boar) at 1½ cts	$ 4.50
50 bushels corn at 8 cts	4.00
25 bushels oats at 6 cts	1.50
	$10.00

The dues remained unpaid.

Westinghouse research reports that in the ordinary electric refrigerator in the home, the heat which finds its way into the compartment is absorbed at the low temperature by the refrigerating mechanism and discharged into the room at slightly above room temperature. This same process can be used to heat homes in cold weather, the heat being taken from the cold outside air and liberated within the house at a temperature sufficient to warm it.

Dr. Miles J. Breuer writes "Apropos of my editorial on insulin for appetite, this report ought to interest you. I have a woman in the hospital now who is a chronic case of poor appetite. She has read all about insulin for appetite, and agreed to be hospitalized for the insulin treatment of anorexia. So, I had the nurses give her one unit of insulin in a syringeful of distilled water, three times a day, after having impressed her with the fact that insulin in the system without food in the stomach is a dangerous business. She is now very enthusiastic over the appetite stimulating properties of insulin; thinks it is wonderful. It will last a few weeks, or until the next fad appears."

Three essay contest prizes and one scholarship will be awarded students in the Creighton medical school, it was announced. Two of the awards will go to seniors, one to a sophomore and one to a junior. The widow of the late H. von W. Schulte, former dean of the Medical school, will give two cash awards of $50 each. One will be given the senior writing the best thesis on the subject, "Pernicious Anemia," and the other will be given for the best thesis from the sophomore class whose subject is "The Adrenal Glands in Health and Disease." Dr. D. M. Nigro of Kansas City is giving an award of $25 to the junior student submitting the best paper on the subject, "The Etiology of Acne Vulgaris." The scholarship award is by Dr. Adolph Sachs, and will go to the senior who has the best academic average.

The Council on Medical Education of the American Medical Association announces that there is being widely distributed an announcement of the Illinois College of Physicians and Surgeons, 20 North Ashland Boulevard, Chicago, which includes the following statement: "Courses offered and requirements for graduation are class 'A' requirements." Inasmuch as the Council on Medical Education and Hospitals of the American Medical Association is the only body which has ever rated medical schools as class A, it is clearly implied that the above named school conforms to the standards prescribed by this Council. Such an inference, however, is wholly unwarranted. The above institution is conducted by a group of chiropractors and does not even remotely approach the standards of a class A medical school.

What a Dakota doctor of forty years of practice thinks may be gathered from the following taken from a Sioux Falls paper: "When I began the practice of medicine and surgery in the early 90's. doctors were well content with mileage at 50c one way and $1.00 for the call. Calls in town were $1.00; confinement cases $10.00, and other prices accordingly. Everybody paid at this time and the doctors were satisfied with a modest competence the same as their neighbor. The idea of being a useful public servant was uppermost in the minds of most doctors. Now a doctor wants to be a millionaire as soon as possible, and is not bothered in the least with any philanthropic ideas. Modern doctors require $1.00 mileage, $3.50 to $5.00 for the call; $40.00 for confinement. How can people pay these prices, especially in these deplorable times?"

NECROLOGY

Valorous A. Thomas, Nelson, Nebr.; Jefferson Medical College, 1897; practitioner at Nelson since graduation; in early life a teacher and sometime county superintendent of Nuckolls county; died of paralysis, January 17, 1933, aged about seventy-six years. A married daughter survives.

Dallas D. Davis, Onawa, Iowa; University of Nebraska College of Medicine, 1925; practitioner at Onawa for two years; previously located at Liberty, Lincoln and Pender, Nebr.; was killed by an electric shock, the result of a short circuiting of his x-ray machine, January 23, 1933, aged thirty-two years.

W. R. Pennington, St. Joseph, Mo.; retired; educational data not available; practitioner at Broken Bow, Nebr., from 1897 to 1909, when he retired from practice and moved to Kansas; died January 17, 1933, aged seventy-six years. Two brothers, physicians, survive—Dr. George Pennington, Broken Bow, and Dr. J. L. Pennington, Thedford.

Joseph P. Riddle, Rushville, Ohio; Medical College of Ohio, 1885; for many years associated with Dr. E. C. Foote, Hastings, Nebr.; later moved to Colorado and still later successively to Newcomersville and Rushville, Ohio; died following an operation, January 26, 1933, aged about seventy-three years. A widow and three daughters and one son survive.

Abraham Romm, Omaha, Nebr., native of Russia; Baltimore University School of Medicine, 1902; practitioner of Omaha for thirty years; died suddenly of a heart affection, February 4, 1933, aged about fifty-two years. A widow, four daughters and a son, survive.

Halbert F. Neal, Meridian, Idaho; native of Peru, Nebr.; Nebraska University College of Medicine, 1903; practitioner at Indianola, Nebr., for two years immediately following graduation; practitioner at Meridian, Idaho, for the past twenty-five years; a man of parts in his profession; died suddenly, January 31, 1933, aged about fifty-three years. A widow and two daughters survive.

TUBERCULOSIS ABSTRACTS

The value of procedures for putting the lung at rest in the treatment of tuberculosis is established. The several methods used are pneumothorax, interruption of the innervation of the diaphragm or the muscles of respiration, removal of portions of the ribs, the insertion of foreign substances or structures between the ribs and pleura, and intrapleural pneumolysis. Recently, a new measure, scaleniotomy, has been suggested for obtaining surgical rest of the lung. Abstracts of two articles on this subject follow.

SCALENIOTOMY—A PRELIMINARY REPORT

Scaleniotomy is the division of the fibres of the scaleni muscles for the purpose of decreasing the motility of the upper chest. This procedure was advocated by Kochs, Els and Junkersdorf in October, 1930, and independently by Gale and Middleton in July, 1931. After their preliminary work the authors felt that they had established apical rest satisfactorily and that the procedure may be a valuable aid, either in conjunction with phrenic exairesis, or when phrenic exairesis has failed and some measure of a relatively conservative type is to be attempted before the patient is subjected to a more radical operation.

MECHANISM OF SCALENIOTOMY

The scaleni are three muscles (sometimes four) of the deep cervical group. They arise from the transverse processes of the third, fourth, fifth, sixth and seventh cervical vertebrae, and are inserted by tendinous bands into the first and second ribs. The scaleni provide anchorage for the first three ribs so that the intercostal group may function on them. Paralysis of the scaleni results in a caudad (toward the posterior) movement of the upper three ribs and exaggerated outward movement of the costal margins on inspiration. This tends to immobilize the pulmonary apices.

Under local anaesthesia the scaleni are carefully dissected out and divided as near their insertions as possible. Injury to the subclavian artery and the lower cervical nerves must be avoided. (The surgical technic is clearly described by the author.) When the wound is closed there is a cavity about the size of a pigeon's egg, the severed edges of the muscle having retracted usually 1.5 inches. No bridging with muscle fibres was observed as late as six months after operation.

"The results obtained from phrenic exairesis depend upon the changes in the relationship of one part of the diseased lung to another; and the relaxation and rest. The amount of improvement is not dependent entirely upon the height to which the paralyzed diaphragm rises in the thorax, although in the main this is so. Some improvement may usually be expected from phrenic exairesis in lesions throughout the lung, especially in the lower three-fourths. In the more remote apical lesions, not so much improvement may be hoped for, and it is in these cases that scaleniotomy may be expected to change the anatomy, and the relationship of diseased parts to each other, and rest the area involved.

"In all our cases, as in the cases reported by Gale and Middleton, a marked reduction in the respiratory excursion of the upper part of the chest was noted, due to decreased intercostal movement; and, when the combined operation was done, there was no increased upper intercostal movement, so often seen when the phrenic nerve alone is blocked or evulsed.

"When scaleniotomy is combined with phrenic exairesis, upper as well as lower lung lesions may be expected to improve.

"When scaleniotomy alone was done, very little reaction occurred; three of the cases ran fever for one week, and in two the pulse-rate was increased for two weeks. No complication has occurred, nor has any deformity resulted. The results in these cases are based on their clinical records and clinical progress."

The results in a series of 2 cases were as follows:

Of 20 cases in which a phrenic exairesis had been done previously, and in which improvement had stopped, ten were improved and ten not improved.

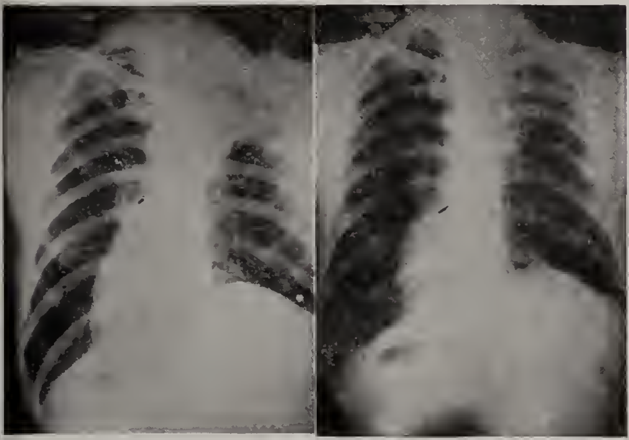
Of 29 cases in which scaleniotomy was combined with phrenic exairesis, 19 improved and ten did not improve.

Of 3 cases in which scaleniotomy only was done, two improved definitely.

Scaleniotomy in the Treatment of Tuberculosis, Meade Clyne, Am. Rev. of Tuberc., Dec., 1932.

SCALENIOTOMY AS AN ADJUNCT TO COLLAPSE THERAPY

Fisher discusses the merits of the various methods of collapse therapy and comments on the results of 31 scaleniotomies done at Waverly Hills Sanatorium. Eighteen of these had had phrenic exairesis from six months to three years previously without obtaining satisfactory contraction of the lesion. The remaining 13 patients were subjected to combined phrenicectomy and scaleniotomy. In every case the inspiratory elevation of the ribs in the upper portion of the hemithorax has been markedly reduced or eliminated as noted on inspection and fluoroscopic examination. By actual measurements in comparable X-ray films, the caudad drooping on inspiration showed as much as a 2-cm. narrowing in the upper hemithorax. "A downward pull on that side, accompanied by a sense of weight over the upper half of the chest, was voluntarily noted by practically every patient in the series. Cough and expectoration tended to show a moderate increase the first day or two, later subsiding or disappearing altogether. Likewise, moderate dyspnoea was temporarily noticed by a number of patients, as indicative of a transitory reduction of vital capacity. In the patients who had had a prior phrenicectomy these symptomatic effects could definitely be attributed to scaleniotomy alone."



A 6-cm. Cavity Present for Three Years.
Marked Clearing and Contraction in 4 Weeks; Phrenicectomy 2 Years Ago Resulted in No Improvement.

Other favorable results noted include release of tension on cavity walls, the ability to sleep without being awakened by a strangling cough, ability to control cough, no recurrence of haemoptysis in two patients in whom it had been frequent before, normal temperature in one patient with fever of long duration. Reduction with clearing throughout the lesion was noted in several.

SUMMARY

The author summarizes as follows:

"Scaleniotomy affords a definite adjunct to collapse therapy and deserves consideration, along with phrenicectomy, in a certain proportion of cases.

"The effect is probably more nearly that of relaxation rather than of true compression, although a negative sort of compression is obtained by eliminating the upward, inspiratory pull exerted by the first and second ribs upon the apex of an adherent lung. Slight narrowing of the upper hemithorax has been shown.

"Striking improvement may be produced by scaleniotomy in a relatively short time, although progressive gains may reasonably be expected to continue over an extended period.

"In a series of 31 cases, some persistent cavities having lung tissue around them have been closed or markedly reduced in size within a very few weeks. Others which were subpleural have been definitely flattened by costal drooping.

"Symptomatic improvement begins immediately in most cases. Relief from cough and decreased expectoration have been consistent effects. Prevention of recurrent haemoptysis and rapid reduction of temperature to normal have been noted."

Scaleniotomy as an Adjunct to Collapse Therapy, Lincoln Fisher, Am. Rev. of Tuberc., Dec., 1932.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The American Board of Obstetrics and Gynecology proposes to hold the first of a series of annual dinners for Diplomates of the Board and their friends on the first day of the Scientific Session of the American Medical Association meeting in Milwaukee, at which time the successful candidates from the examination of the day before will be introduced in person, one or more addresses will be made by officers of the Board and a Round Table Conference and general discussion of the activities of the board will follow. Diplomates expecting to be in attendance at the Scientific Session of the American Medical Association are urged to make reservation for this subscription dinner as early as possible through the office of the secretary of this board. Further announcements will be made through the Journal of the American Medical Association and the American Journal of Obstetrics and Gynecology.

The next written examination and review of case histories will be held in cities throughout this country and Canada, where there are diplomates who may be empowered to conduct the examination, on April 1, 1933.

The next general, clinical examination is to be held in Milwaukee on Tuesday, June 13, 1933, immediately preceding the annual session of the American Medical Association. Reduced railroad rates will apply.

For further information and application blanks, address the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

AUXILIARY NEWS LETTER

Plans are underway for the state meeting to be held in Omaha on May 23, 24 and 25. Mrs. Clyde Roeder, state president, has appointed Mrs. C. C. Tomlinson of Omaha as chairman of the entertainment committee.

* * * * * *

Ladies of the Dodge County Medical Society Auxiliary heard interesting talks on "Public Health", Tuesday given by Mrs. C. A. Roeder and Mrs. Charles W. Pollard, officers of the state medical society auxiliary from Omaha. The program at the home of Mrs. C. G. Moore followed a one o'clock luncheon for fourteen at the home of Mrs. L. C. Wicks.

Mrs. Roeder, who is president of the state auxiliary, outlined plans for the year and urged the emphasis of health education. She asked auxiliary members to assist in every way possible with any health projects in their community, such as free clinics.

As state program and legislative chairman, Mrs. Pollard mentioned program plans of the state auxiliary. She also stressed the importance of auxiliary participation in public health measures.

* * * * * *

In November the Lincoln County Auxiliary sponsored a benefit bridge, netting $18.00. This was used to establish a milk fund for infants and needy preschool children The auxiliary works with the local Community Service League in distributing the milk. They plan a book review tea for Friday, February 17th, at which they hope to make a goodly sum for a very worthy cause. This auxiliary holds monthly meetings.

* * * * * *

In January the Douglas County Auxiliary held a meeting in the club rooms. Dr. John T. Myers, lecturer of Public Health at the University of Nebraska, talked on the health situation in Douglas county and Nebraska. Afterwards tea and wafers were served to the doctors and their wives.

* * * * * *

Otoe county recently organized an auxiliary at Nebraska City. Mrs. D. D. Stonecypher was elected president. It was through Mrs. H. R. Miner's efforts that the auxiliary was organized. Mrs. Clyde Roeder and Mrs. Charles Pollard of Omaha were present at the meeting.

REFERENCES FOR AUXILIARY MEMBERS

State Auxiliary Advisors—Dr. H. J. Lehnoff, Lincoln, Nebraska; Dr. Elizabeth Swab, Omaha, Nebraska; Dr. Andrew Harvey, Fremont, Nebraska.

Douglas County Auxiliary Advisors—Dr. Adolph Sachs, Dr. E. T. Manning, Dr. W. P. Wherry.

I—The following may be obtained from the A. M. A. Association, 535 No. Dearborn St., Chicago:

Medical and Health Publications for the Layman (a price list).

Rules of the Game, by Jesse F. Williams.

What's a Health Exam.?, by Haven Emerson, M. D.

Common Sense in Mouth Hygiene, by Wm. M. Gardner.

Communicable Disease Control.

Fit for First Day of School.

County Health Unit.

Hygeia—Excellent articles for use in any or all Health Programs.

Auxiliary Hand-Book History—Explanations and Outlines.

II—National Tuberculosis Association.

"Go to your Doctor."

III—Write to Dr. P. H. Bartholomew, Nebraska Dept. of Health, Lincoln, for:

Rules and Regulations.

Biennium Report.

Report of Division of Vital Statistics.

Morbidity summary.

Physical Examination of Nebraska Pupils.

Ask for copy of Nebraska Child Labor Law.

Digest of Social Hygiene Laws. 1922.

Compiled statutes of Nebraska. 1929—Art. 15. Sterilization of insane and feeble minded.

Compiled statutes of Nebraska. 1922. Employment of City or Community Nurse.

IV—Write to Public Activities Committee of Nebraska State Medical Association, Doctor E. R. Hays for "Prenatal Care" and other publications.

V—Ask for Nebraska Legislative Reference Bureau Leaflet No. 4—1926.

Nebraska Voters Hand-Book No. 15. Miss Edna D. Bullock, director, Lincoln.

VI—Join many organizations doing health study. Aid in assembling proper information for such groups.

VII—Attend nurses conventions for valuable information. Also all auxiliary meetings.

VIII—Send to your congressman for copy of Jones Bill, S. 572; Bankhead Bill, H. R. 7525; Maternity and Infancy bills before congress now.

IX—Ask your Legislator at Lincoln to send you the list of bills introduced day by day.

—Mrs. C. W. Pollard, Health Program Chairman.

THE SOCIETIES

The **Omaha-Douglas County Medical Society** met January 10, with President Riley in the chair.

The resolution reducing the dues was read, as follows: "Inasmuch as many of our members find it difficult in these hard times to pay their regular dues to the society and since in view of our 1932 balance it will be possible to minimize the annual dues for this year, be it therefore RESOLVED that until the council deems it advisable to change, the following dues be permitted: Members in practice five years or more shall pay $15.00 a year; members in practice less than five years shall pay $11.00 per year. Full time faculty men $10.00 per year; associate members (internes) $3.00 per year.

Passed unanimously.

The scientific program was in charge of the staff of the Douglas County Hospital.

Dr. J. W. Duncan read a paper on the "Financial Requirements of Our County Hospital."

The second paper was on "Allergic Bronchitis," by Dr. E. L. MacQuiddy.

Doctor Earl Connolly read a paper on "Injection of Sympathetic Fibers in Angina Pectoris and Asthma."

The next speaker, Dr. M. C. Howard, talked on "Typhoid in a Splenectonized Patient."

Dr. Russell Best's subject was "Megalocolon and the Surgical Treatment."

Dr. J. Hewitt Judd spoke on an "Improved Method of Enucleation," and J. W. Martin on "Treatment of Compression Fractures of the Spine."

At the meeting of January 24, the following proceedings were had:

The president announced that the ladies of the auxiliary would serve lunch in the club rooms immediately following the meeting.

Dr. Roy Fouts spoke briefly for the Legislative Committee, asking the support of the members for two bills, Senate Files Numbers 189 and 193.

The scientific program was in charge of members of the staff of Saint Joseph's Hospital.

The first presentation was by Dr. Z. N. Korth who talked on "Buerger's Disease." He had two cases present and his talk was illustrated by lantern slides.

Dr. J. F. Gardiner reported a case of "Multiple Fractures of Unknown Origin" and showed x-ray plates to illustrate spontaneous fractures in different parts of the patient's body.

The next presentation was a report of a case of "Chronic Inversion of the Uterus" by Dr. M. E. Grier. This report was also illustrated by lantern slides.

Dr. J. F. Kelly next gave the Annual Report of the Tumor Clinic, illustrated with numerous charts.

The final paper of the evening was by Doctor F. S. Clarke, who talked on "Sicklemia in the White Race." Doctor Clarke had one patient on the platform with him, and gave the history of one other case.

The annual meeting of the **Saline County Medical Society** was held at Friend, January 24, and the following officers were elected: President, Dr. R. C. Kirchman, Wilbur; vice president, Dr. A. A. Conrad, Crete; secretary-treasurer, Dr. R. K. Johnson, Friend.

The **Saunders County Medical Society** met at Wahoo, January 23, and reelected Dr. M. E. Lathrop, Wahoo, president; Dr. C. Q. Dodd, Weston, vice president; Dr. Frank Tornholm, Wahoo, secretary-treasurer; Dr. Mason Lathrop, delegate.

The **Dawson County Medical Society** held their 31st annual New Year's Conference in the party room of the Smith Cafe at Gothenburg, January 23. Following the dinner the program consisted of subjects of local interest.

The following officers were elected for the ensuing year: President, Dr. B. W. Plye of Gothenburg; vice president, Dr. W. J. Birkofer of Gothenburg; secretary-treasurer, Dr. C. H. Sheets of Cozad; delegate, Dr. R. E. Reeves of Farnam.

A meeting of the physicians of **Webster County** was held at Red Cloud, January 31, following a banquet.

A business session followed, during which they rearranged their fees to be more in accord with the prevailing business conditions. The following officers were elected: President, Dr. E. A. Creighton; vice president, Dr. Wm. B. Wegmann; secretary-treasurer, Dr. H. S. Reed.

At a meeting of the **Tri-County Medical Society** held in Grand Island, January 27, Dr. Fred Fouts, Central City, was elected president, and Dr. Amel Johnson, Grand Island, was reelected secretary-treasurer. This association comprises the counties of Hall, Howard and Merrick.

The **Richardson County Medical Society** and Auxiliary had dinner in the Legion hall, Falls City, January 17.

Dr. Edward H. Skinner of Kansas City, Mo., gave a talk on "Prevention of Malignant Diseases," and Dr. Kip Robinson of Kansas City spoke on "Cancer of the Cervix."

The **Southwestern Nebraska Medical Society** met in McCook, the middle of January.

Dr. E. C. Foote of Hastings, eye specialist told of his experiences while in India where he went to study cataract of the eye, and of the methods used to treat it there. It is more prevalent in that country than elsewhere.

The other subjects discussed were: "Childhood Tuberculosis," by Dr. T. L. Havlick, Kearney; "Diagnosis of Goitre and Brief Reference to the Treatment," Dr. W. J. Arasmith of Grand Island.

Discussions of the subjects by the visiting physicians then followed by members of the society: Drs. F. M. Karrer of Palisade; C. C. Carlson, Wauneta; W. E. Knox, McCook; W. D. Mackechnie, Indianola; G. D. Conwell, McCook; Charles Cole, Norton.

The wives of the physicians, during the time the doctors were holding their session, played bridge on the mezzanine floor of the hotel.

The **Seward County Medical Society** at Seward, January 6, elected Dr. Lloyd Ragan, Seward, president; Dr. J. E. Meisenback, Stapleton, vice president; Dr. C. F. Hille, Beaver Crossing, secretary-treasurer; Dr. J. E. Meisenbach, delegate.

The **Lincoln County Medical Society** held their regular monthly meeting and dinner at noon, January 12, at the Hotel Pawnee dining room, North Platte. Following the dinner Dr. Edward Stevenson gave a paper on "Infant Feeding." Several out-of-town doctors attended.

The **Holt County Medical Society** met at Long Pine, February 10. Dr. R. R. Brady of Wood Lake presented a paper on "Skull Fractures" and Dr. M. R. Carrig, Stuart, read a paper on "Infant Feeding."

HUMAN INTEREST TALES

Dr. Albert Sudman has located at North Platte.

Dr. A. L. Black, formerly of Akron, Colo., has located at Shelton.

Dr. J. R. Holliday, Oklahoma City, visited relatives in Auburn recently.

Dr. and Mrs. Charles Lucas, Shelton, have gone to Los Angeles for a time.

Dr. A. J. Griot, Chadron, spent a month in Chicago in special work on the eye.

Dr. W. H. Reed, Bensen, has been appointed physician to the Clearview home.

Dr. George L. Wagner, for some years out of practice, has located at Scottsbluff.

Surgical instruments were recently stolen from the car of Dr. A. O. Peterson, Omaha.

A solarium type carbon arc lamp has been installed in the Orthopedic hospital, Lincoln.

Dr. Amy Chapman, Franklin, suffered injuries to her knee by a misstep and fall recently.

Dr. M. M. Sullivan, Spaulding, has been appointed to the state fish and game commission.

Dr. L. M. Stearns, Kearney, has recovered from an operation performed in an Omaha hospital.

Dr. D. B. Park, Vallejo, Calif., visited his mother and sisters at Tekamah, during the holidays.

Dr. Olga Stastny, Omaha, recently gave a talk on Czechoslovakia before the Kappa Delta alumnae.

Dr. G. K. Fair has lcated at Orleans, succeeding Dr. W. G. Rundle who retired on account of ill health.

Dr. G. H. Morris, Newman Grove, has gone to California with the intention of locating in that state.

Dr. A. B. Walker, Lincoln, visited in Santa Barbara, Calif., and other southwest and Pacific Coast points.

Dr. George L. Pinney, Hastings, was called to Los Angeles last month by the serious illness of his father.

Dr. A. C. Barry, Norfolk, before the Business and Professional Women's club, recently, spoke on "Heredity."

Dr. Charles McPharlin and son of Patagonia, Ariz., visited at O'Neill, the home of the doctor's boyhood, in January.

Dr. G. J. Hand, Alliance, has filed a damage suit for $50,000 against a banker as a result of an automobile accident.

Dr. W. P. Wherry, Omaha, addressed the Pre-Medic club recently on "What is Expected of an Undergraduate Medic Student."

Dr. F. W. Luhman, Pender, was called to Manitowoc, Wis., in January, to the deathbed of his father, Dr. F. S. Luhmann.

Dr. Harry N. Boyne, of the Creighton Medical College faculty is at present doing special harelip work in Berlin under Erenst.

Dr. J. E. M. Thomson, Lincoln, has been elected secretary-treasurer of the Clinical Orthopedic society, a national organization.

Dr. Olga Stastny, Omaha, addressed the Business and Professional Women's club of Fremont, February 6, on "International Problems."

Dr. and Mrs. L. M. Stearns, Kearney, have taken a cruise to the Antilles to further the doctor's convalescence from a recent operation.

Two medicine grips, stolen from the Dr. J. E. Limburg, Fremont, automobile last month, were found at a schoolhouse, unharmed and not looted.

Dr. C. M. Wilhelmj of Creighton Medical College gave a talk on "Plagues and Civilization" before the Omaha Professional Men's club, recently.

Dr. Joseph VanAckeran of the Navy medical service visited his parents at Humphrey recently, enroute to service in the government naval hospital at Seattle.

Dr. Nora Fairchild, Omaha, has gone to India for the second time and will be in charge of eye work at a hospital at Brindabaum, United Provinces.

"New Chemical Constants in the Biological Field" was the title of an address given by Dr. C. M. Wilhelmj, Omaha, before the Omaha branch of the American Chemical society, in January.

The library of the late Dean H. von W. Schulte of Creighton Medical College, was presented to the library of the Creighton Medical School by Mrs. Schulte. The library consists of 2000 volumes.

A former Omaha colored physician, Dr. Aaron McMillan, is now in charge of a small mission hospital at Galangue, Angola, Southwest Africa, and is reported doing excellent work among the natives. On a recent hunting expedition he killed a lion measuring 11 feet from nose to tip of tail.

Dr. Henry B. Ward, former dean of the University of Nebraska medical school, was recently elected permanent secretary of the American Association for the Advancement of Science. Dr. Ward will retire from his position as professor and head of the department of zoology at the University of Illinois in June to take over the secretaryship.

CONVULSIONS IN CHILDHOOD

M. G. Peterman, Milwaukee (*Journal A. M. A.*, Aug. 23, 1932), reports the results of a study of 419 cases of convulsions in children. A diagnosis was established in 93.3 per cent. The study includes a complete history, a careful physical examination, including neurologic studies, a blood count, a Wassermann test of the blood and microprecipitation tests, urinalysis, examination of the spinal fluid (except in spasmophilia), examination of the fundi, x-rays of the skull and examinations of the stools. In the past three years the author has made encephalograms in doubtful cases. The results reveal that certain diseases peculiar to childhood are the direct causes of most of the convulsions. While some children may be said to be particularly susceptible to the convulsive state, this study indicates that there is usually a physical basis for this susceptibility (spasmophilia or epilepsy) which is amenable to treatment. Every convulsion produces a certain amount of cerebral injury and therefore lowers the threshold for subsequent seizures. Every convulsion demands a careful study and effort to prevent a recurrence. It is extremely unfortunate that there are still physicians who consider convulsions a necessary evil of childhood and advise parents that the child will "outgrow" the tendency. The author presents a practical classification of convulsions in childhood based on the age of the patient.

LUNGS OF CHILDREN WITH ASCARIS

A. E. Keller, H. T. Hillstrom and R. S. Gass, Nashville, Tenn. (*Journal A. M. A.*, Oct. 8, 1932), present observations which suggest that in children who are infested with Ascaris lumbricoides and who show no response to tuberculin tests the widening in the hilar areas with increase in the bronchovascular markings are possibly due to the repeated migration of ascaris larvae through the lungs. They may occur either as a result of the damage done by the larvae themselves or as the result of infection by micro-organisms which invade the pulmonary tissue at the time the larvae escape from the blood vessels into the alveoli. The changes seen on roentgen examination, which have been attributed to the migrations of ascaris larvae, are similar to those seen in the childhood type of hilar tuberculosis and may also resemble the changes which occur following repeated nonspecific infections of the lungs.

The chief trouble with the law's teeth seems to be gold filling.—Parkersburg (W. Va.) Sentinel.

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ACUTE INTUSSUSCEPTION*

CHARLES W. MAYO, M. D.,
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Under the general group of intestinal obstruction are several subgroups, one of the most important of which is mechanical obstruction. In turn, this may be divided into groups, and on one of these, intussusception, I wish to focus attention. The tragedy of intussusception is not alone in the high mortality, but in the fact that it attacks youngsters on the threshold of life who generally, until that time, were perfectly well.

Intussusception may take place at any point in the small or large intestine and it may be acute or chronic. In the adult the condition is more likely to be chronic, and a definite pathologic change, such as a benign or malignant tumor, is more likely to be the exciting cause. For instance, Comfort found that intussusception occurred twenty-six times as a complication in twenty-nine cases of submucous lipoma of the small bowel and thirty-three times in sixty-two cases in which the large bowel was the site of the lipoma. Interestingly enough, too, he found that spontaneous expulsion occurred twelve times.

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*Read before the Twelfth Annual Meeting of the Seventh Councilor District Medical Society, Superior, Nebraska, October 27, 1932.

In children the acute form is most common, and it is unusual to find a definite pathologic basis for the event, with the exception of a Meckel's diverticulum of which some cases have been reported in association with intussusception. The most common intussusception in children is the ileocolic type, in which the cecum precedes the ileum into the ascending colon. The etiologic explanation usually given for this lies in the fact that in the infant the ileocecal valve projects ⅜ inch into the cecum, and the terminal part of the ileum is surrounded by a very rich lymphatic supply. Due to digestive disturbances which are more likely to occur after the fifth month of life, when changes in diet are made, the lymphatic structures become swollen, and the terminal part of the ileum projecting into the cecum acts as an irritant, increasing peristalsis. This type is more common among healthy children, because in them lymphatic tissue is better developed.

Mann, in a personal communication, has given me to understand that intussusception is not a rare occurrence in dogs; particularly are they prone to this trouble during puppyhood. It is his opinion, too, that in many instances the intussusception in such cases is spontaneously reduced. Montgomery and Mussil, in their experimental work on dogs, found considerable difficulty, not only in inducing intussusception, but in keeping it from reducing itself once it was formed. It is possible in certain instances that severe intestinal colic of children, with spontaneous recovery, may have some such etiologic factor behind it.

Since approximately 80 per cent of cases of intussusception affect children less than two years of age, the relative proportion of cases remaining to afflict adults is, of course, small. According to Montgomery, 50 per cent of cases occur when patients are between the fifth and ninth months of life, and the condition is twice as frequent among boys as among girls. These figures are substantiated by our own series.

Much has been written concerning the diagnosis of acute intussusception. In no condition is an early diagnosis more important from the standpoints of morbidity and mortality. The salient features are usually clear cut, consisting of severe, colicky pains, visible peristalsis, nausea, vomiting, the passage of bloody, mucous stools, and the appearance, generally in the right lower abdominal quadrant, of a sausage-shaped mass. Once the diagnosis is made the case becomes surgical; if the condition is suspected, few hours should pass before surgical consultation is called because the element of time is the greatest single factor concerned with proper treatment.

The treatment of intussusception may be divided into two types: medical and surgical. The medical treatment may be disposed of briefly as being more of historic than of contemporary interest, although occasionally, under proper supervision and in selected cases, it may be used today with benefit. In the early days, when the hazards of surgery per se were great, it was the rule rather than the exception to employ medical measures in the reduction of intussusception. For this purpose, air, water, oil and barium at times have been introduced by rectum. Hirschsprung was an adherent of reduction by water and used it under a pressure represented by an elevation of 65 to 85 cm. He claimed 85 per cent cures, but obviously his enthusiasm influenced his estimate.

In recent years a combination procedure has been suggested. Farr employs air instead of water, as being safer and more easily evacuated without soiling. Injection of air is followed immediately by laparotomy, and Farr feels that the advantage is not only in diagnosis, but that, with such a combined method, a large part of the operation and occasionally all of it is completed before the abdomen is opened.

Retan, in the nonoperative treatment of intussusception, places the child on a horizontal fluoroscopic table and injects barium and water into the rectum by gravity, under pressure exerted by elevation of 3 to 4 feet. The barium, he states, will stop at some level below the intussusception. When the flow of barium is turned off, gas remains above it. Careful intermittent pressure on the abdomen, over the sigmoid, with the flat of one hand, transmits force from the barium to the gas above. The progress is watched under the fluoroscope. Retan wisely advises, "In case of doubt, operate."

The principle objection to the usual medical treatment in these cases is that it is given blindly, and judging from reported cases the fact must be faced that after intussusception has existed thirty hours there is a considerable percentage of cases in which the intussusception is irreducible or should not be reduced. The methods, if used at all, should be employed within a few hours of the onset of symptoms.

The treatment of intussusception as a rule is surgical. The type of operation to be employed must be adapted to the individual case, being radical enough, but not too radical. As in any other surgical condition, it is impossible to lay down any hard and fast rule to follow. The two chief factors which determine what is to be done are the duration of symptoms and the extent of the intussusception. The factor of time is the more important. As in other cases of acute intestinal obstruction the mortality rises rapidly with the passage of time.

The literature, and our figures at the clinic would seem to suggest that when the patient is seen within the first twenty-four or thirty-six hours the intussusception itself usually may be attacked surgically, with the object in view of manual reduction and fixation to prevent recurrence. Fixation consists in attaching the reduced bowel to the mesocolon near the cecum, to the cecum itself, or to the peritoneum of the anterior abdominal wall.

It is in the group of cases in which operation is sought later than twenty-four hours after the onset of symptoms that the mortality rate of surgical intervention in intussusception is raised. What are the causes of death in this connection?

When intussusception occurs, certain defense mechanisms of the body are brought into play. The mobilization of those forces, the duty of which, under the circumstances, is to arrest progress of the intussuscepted bowel, and to fix it to prevent perforation, takes a variable length of time, depending on the patient. Twenty-four hours, and usually thirty-six hours must elapse before this natural process takes place. The extent of the intussusception depends on the point of intussusception, and on the mobility of the cecum, which in infants and children usually lies high, near the liver, and is distinctly mobile. It explains why occasionally the intussuscepted bowel may pass to or even out of the rectum before its onward progress is checked.

At the point of fixation there is another natural process at work, the purpose of which is, by edema, swelling, and placement of fibrous adhesion, to cut off the blood supply and prepare the intussuscepted loop for spontaneous elimination. The first to be cut off because of lower pressure and thinner walls is the venous supply. As time goes on, the arterial supply is also cut off. It is not until both have been occluded that spontaneous elimination will take place. It is my opinion that intussusception which goes on to a chronic form has had the venous drainage injured, but that the arterial supply remains intact, and perhaps, both because of a favorable situation of the intussusception and the rapid readjustment of venous circulation, the intussuscepted bowel has continued to live, the patient exhibiting the signs and symptoms of partial obstruction.

When one considers these facts, it is not strange that, after passage of a certain time, varying with the person and the situation of the intussusception, reduction is effected with increasing difficulty. The interpretation of what is a justifiable effort at reduction is the crux of the situation. Justifiable is a "weaseling" word, the definition of which is subject to the individual surgeon's judgment, temperament, and strength, and no two surgeons are exactly alike. The danger of undue manipulation in colonic surgery, when in the presence of colitis or an obstructing lesion, has been widely taught. The same danger exists in too extensive handling of the intestines in the presence of intussusception.

When reduction is difficult, further risks are involved. The intestine may be torn, necessitating repair in a poorly nourished region; the reduced bowel may have undergone beginning wet gangrene if the venous circulation has been severely injured or destroyed and if the arterial supply continues to function. Will the circulation adjust itself? Should the affected bowel be resected or extraperitonized?

Once reduction has been effected with difficulty, and there is some question as to viability of the involved tissue, it is better to wrap it in omentum or fold it on its own mesentery, than resect. If it seems that resection will be advisable, it is better to extraperitonize the involved loop and leave it for a while than to resect it immediately.

Immediate resection of reduced, intussuscepted bowel has accounted for a large percentage of the high mortality in dealing with acute intussusception. Resection of any nonviable bowel carries a high risk, as, for example, strangulated hernia. In the series of thirty-two cases studied in preparation of this report resection was carried out twice and both patients died. Hipsley performed resection in two of fifty cases and lost both patients; Clubbe, in sixteen of 253 cases, had had a mortality of 88 per cent, and Peterson and Carter in sixteen of sixty-four cases had a mortality of approximately 70 per cent. It may be said that the average mortality of immediate resection in these cases is about 85 per cent.

If the reduced loop is the site of definite necrosis or gangrene, it is best to extraperitonize it. Colonic surgery again has taught that patients tolerate multiple smaller operations better than one large operation. Secondary closure and anastomosis can be effected later, at an opportune time.

To circumvent the risks of prolonged manipulation and extensive resection it is best to aid nature in the attempt to fix the bowel and prevent progress of the intussusception, and then, if the extent of intussusception has not been too great, to short-circuit the involved portion, being enabled, thus, to deal with viable intestine.

If the intussusception is extensive and it is inadvisable to perform ileocolostomy, the bowel may be fixed with interrupted sutures, to prevent progress of the intussusception, and then ileostomy may be performed to take care of obstruction, which if not marked at the time will be an increasing factor in the condition. If days have passed since the onset of intussusception, obstruction may be the only condition possible to treat surgically. In such a case exploration is not advisable, and ileostomy is the procedure of choice, leaving to nature the task of fixing the intussusception and spontaneously eliminating the part of the bowel involved.

Spontaneous passage of intussuscepted bowel must have been a much more usual occurrence when the treatment of such conditions was a medical problem. Occasional cases have been reported in the literature.

I recently observed an interesting case, which illustrates many of the possibilities in intussusception. A boy, aged six years, was brought to the hospital with a history of having had acute intestinal obstruction for eight days. Ileostomy was performed, and on the twelfth day he began to pass stools by rectum; on the twenty-first day the clinical signs and symptoms of acute intussusception developed, and with them the problem of what to do. On the basis of the patient's poor condition and the fact that the existing ileostomy took care of the obstruction, together with the hope that nature would fix and eliminate the intussuscepted bowel, a medical regimen was continued. By the eleventh day after the onset of the acute intussusception the boy passed by rectum what was estimated to be between 3½ and 4 feet of bowel. He again began to have normal stools, so that some weeks later I closed the enteric stoma and sent the boy home. He was suffering from partial obstruction, but seemed to get along well on a diet high in carbohydrate and low in residue. I felt that the point of partial obstruction was where the spontaneous anastomosis had taken place, but hoped that nature and time would do much to clear up the symptoms. An indiscretion in diet while the boy was at home brought about another complete obstruction, and it became necessary once more to perform emergency ileostomy. Again it was impossible to explore. Fortunately the boy convalesced satisfactorily and gained 15 pounds. Not daring to send him home again without exploration, I operated and through a right rectus incision found that the cecum and appendix were still present and that there still existed chronic intussusception of about 9 inches of ileum, making a tumor 4½ inches long, through the cecum and up the ascending colon. Picking a point between the previously closed stoma of the ileum and the existing one (which was nearest to the cecum) ileocolostomy was performed about the obstruction and beyond the extent of the chronic intussusception.

It may be necessary at a later date to resect the short-circuited portion of bowel, consisting of a portion of ileum, the cecum, the appendix, and part of the right half of the colon. The fact remains, however, that the patient is alive and in relatively good health after multiple conservative operations and, of course, a great share of good luck.

Before bringing these remarks to a close I wish to deliver one more protest against immediate resection in these cases of long standing. All writers on the subject agree on the high mortality of this procedure, and it is evident that death is not so much due to the technic of operation as to the type of operation. Consequently, I would present for your consideration, the advisability in place of attempting reduction of intussusception of more than thirty-six hours duration, of performing short-circuiting ileocolostomy, with fixation at the point of intussusception to prevent progression.

CONCLUSIONS

Acute intussusception is primarily a surgical condition. Medical treatment may be attempted in selected cases if the intussusception is of less than twenty-four hours' duration, and if one is prepared to combine this treatment with operation.

Surgically, in less than twenty-four hours and usually in less than thirty-six, reduction of the intussuscepted bowel is possible and carries a low mortality. Of the series of thirty-two cases observed at the clinic, in sixteen this procedure was employed within twenty-four hours of the onset without a death.

Immediate resection in acute intussusception carries a high mortality. Rather than attempt reduction after a duration of thirty-six hours, consideration should be given to fixation, to prevent progression of the intussusception, and to ileocolostomy around the involved portion of bowel.

The mortality in a series of thirty-two cases of acute intussusception affecting children of less than twelve years of age, seen at the clinic, was 22.5 per cent. In the two cases in which immediate resection was thought necessary, the patients died.

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A CONSIDERATION OF THE OCCIPITO-POSTERIOR PRESENTATION

With Especial Attention to the Diagnosis, and Delivery by the Scanzoni Maneuver*

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Under this heading, let us consider two phases: first, the incidence, and second, the method of dealing with the situation when it is present.

Williams states that in 5,488 cases of labor, vertex presenting, there were 635 occipito-posterior, or 11.3 per cent. In these, the prevalence of right over left was in the ratio of 5 to 2. This is accounted for by the fact that from 64 to 70 per cent of vertex presentations occur with the occiput at one or the other end of the right diameter of the pelvis, while in only from 30 to 36 per cent of the cases does it occupy the left diameter. The reason for this predominance is that the left diameter is encroached upon by the rectum, and the head naturally seeks the greater diameter. Williams also says that the per cent of posteriors would be greater if the patients were seen earlier in labor. Brown, in a series of 48,449 vertex presentations, gives 70 per cent in L.O.A.; 29 per cent in R.O.P.; and the remaining 1 per cent in either R.O.A. or L.O.P. De Lee believes that all vertex presentations begin labor as transverses.

From personal observation, and from an opinion gained from conversation with others, one interesting fact regarding the occurrence of posterior presentations is noted. That is, the apparently epidemic nature with which they are met. Recently in 12 consecutive cases seen in private practice and clinic work, the following presentations occurred: R.O.P.—5; L.O.A.—1; R.O.P.—3; L.O.A.—1; R.O.P.—2. On the other hand, in the previous year, and in approximately 100 cases, only two posterior presentations were encountered. One obstetrician told me that in two years of active private practice, he had not had a single posterior, and then had almost a dozen in succession. Others confirm these findings.

However, the incidence is a matter of purely academic and statistical interest, from the point of view of the practitioner. The essential practical points are first, the diagnosis of the presentation, and second, the methods of dealing with it when it does arise. And here I think it well to mention that reliable statistics show that about 85 per cent of posteriors will rotate spontaneously, and of the remaining 15 per cent, a half will also rotate if the patient is given sufficient time. Consequently, the procedure to be described in this paper is applicable in approximately 7½ per cent of the posterior presentations.

The diagnosis is a matter which is generally easily determined by the established methods of abdominal palpation and rectal or vaginal examination. But there several difficulties are encountered which may prove slightly confusing, and these I would like to discuss briefly.

First, perhaps it has been noted that no mention was made of the location of the foetal heart sounds as a diagnostic aid. The importance of not relying alone on the information thus gained is emphasized by practically all the authorities, yet I find it to be the one chief failure encountered in students. It is taught that the foetal heart is usually heard more clearly through the back, especially in anterior presentations, and that when dealing with a posterior, it is generally in the flank, but is sometimes best transmitted through the chest wall, and heard anteriorly, generally in the region of the umbilicus. Let us take an imagined case of a very corpulent multipara, with thick abdominal walls, and a rather generous supply of amniotic fluid. In such a case, abdominal palpation will probably be extremly difficult, and in some few cases may reveal nothing definite. It is in such cases that the students, and possibly some practitioners, on hearing the foetal heart near the umbilicus, and failing to definitely palpate a back. assume that the back must be posterior. Suppose that such a mistake is made, and that on the following rectal or vaginal examination it is discovered that the head is just above the level of the spines, and the cervix thick, soft, and three fingers dilated. In such a case, palpation of an ear may be difficult. The physician, feeling the saggital suture in the right oblique, and prejudiced by his previously formed opinion gained from the location of the foetal heart sounds, decides that the presentation is R.O.P. At the next examination, some two or three hours later, practically the same condition is found, and the doctor feels that his diagnosis must be correct, because no appreciable advance has taken place, and the pains have been strong and regular in the interval between the two examinations. Then what happens? He decides that labor should be terminated. Several procedures, all recognized, are available. Among others are: 1, Cesarean section, which is ruled out because of no disproportion, and by the danger of infection; 2, manual dilatation. version and extraction; 3, the use of Kielland forceps; 4, manual rotation, and the use of forceps; 5, delivery by forceps with the head posterior; 6, the use of one forceps blade as a vectis; 7, the Scanzoni maneuver. Let us assume that the last procedure is the one chosen, because the doctor was not familiar with the Kielland forceps, could not perform a manual rotation; and feels it safer than a version and extraction, as well as the best of the instrumental methods of rotating the head. Exception may be taken to the statement that manual rotation could no be performed, but it is my belief that this condition exists more often than the text books would lead us to believe. The cervix is dilated, the forceps applied, the head rotated, the forceps removed and reapplied, and the baby is delivered in L.O.P., the operator having rotated the head from L.O.A. to L.O.P., rather than from R.O.P. to R.O.A. This may sound impossible, and we will all agree that the attending physician must have been extremely careless, and should have palpated an ear, if not at first, then when he applied his forceps. and if not then, certainly when he made the reapplication The only reply is that such criticism is obvious, but that in spite of such apparent gross neglect, such cases have occurred. And they have occurred even after the palpation of an ear. It is my belief that the primary cause for such an error lies in the mistaken idea of the presentation formed by the location of the foetal heart sounds, before the pelvic examination is performed.

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The above discussion brings out the necessity of palpating an ear. Another diagnostic procedure, which is taught at the Western Reserve University School of Medicine, seems to me easier, and less liable to error, especially in the hands of those who are not devoting themselves primarily to obstetrics; that is, the palpation of the sutures. No matter what the abdominal findings, and regardless of the difficulty in palpating an ear, in any case with as much as two fingers dilatation of the cervix, it is seldom difficult to feel to one end of the saggital suture, and I would say unreservedly that it is never hard when the cervix is dilated as much as three fingers. The end felt is arbitrary. The saggital suture is located, and the fingers proceed either anteriorly or posterioly until one end is reached. The index finger is then turned 90 degrees to one side. and next is swung through an arc of 180 degrees. Let us assume that we have found the saggital suture in the right oblique, and reach the anterior end of the suture. If so, in describing the 180 degree arc, the index finger will pass over two or three sutures; the two lambdoids if the presentation is L.O.A., and the two coronals and the frontal in case of an R.O.P. Let us assume we are dealing with an R.O.P. Then, having completed the above maneuver. and having palpated three sutures, we know that the two lambdoids must be at the other end of the saggital suture, and our diagnosis is assured. Now suppose the examining fingers were first directed to the posterior end of the saggital suture. The index finger will, in that case, pass over only two sutures in making the arc. They must be the lambdoids, and the diagnosis is again established. In this latter examination, care must be taken to extend the finger far enough so that it will swing around and not over the caput. The danger of error lies in not feeling far enough. If this is done, probably no sutures will be defined, and this alone should be sufficient cause to extend the finger until the sutures are met. Naturally, the only differences when dealing with an anterior presentation are that the lambdoids and caput are at the anterior end of the saggital suture.

We next proceed to our delivery by the Scanzoni maneuver. But before entering on this point, may I digress for a moment to urge that we all read and become thoroughly familiar with the most excellent article on "The Use and Abuse of Forceps" by Dr. A. H. Bill. Certainly no one should perform this maneuver unless he is entirely familiar with the use of forceps, and Dr. Bill gives extremely good advice regarding their use. He covers, among others, all the points upon which I shall have time to touch but briefly. They are: 1. Complete manual dilatation of all soft parts, being certain of complete cervical dilatation before applying the forceps. 2. Correct diagnosis. 3. Correct application, which should always be cephalic. 4. The Scanzoni maneuver itself, and the delivery of the baby.

To consider each point briefly: First, the patient should be placed under surgical anaesthesia during the dilatation of the soft parts. This is necessary so that she will not be straining and moving during the procedure. It also assures relaxation of the perineal muscles, which facilitates the dilatation. The necessity for complete dilatation of the cervix need only be mentioned, as the dangers of and harm resulting from attempts at forceps delivery through an undilated cervix are well known. The reasons for complete dilatation of the other soft parts are that it facilitates the delivery of the head. and makes the delivery possible with the use of much less traction than would have to be applied were the dilatation to be accomplished by mere pull on the head as it descends the birth canal.

Second: We have already considered the matter of correct diagnosis.

Third: Correct application of forceps. This is a most essential point, and again the saggital suture and the lambdoids are our landmarks. The blades are, of course, applied reversely, as for an L. O. A. After the application, the index finger makes three important determinations. First, are the blades parallel to the lambdoid sutures, and second, are they equidistant from them? If so, the application will be correct. If not, slight adjustment must be made until these conditions are fulfilled. And in their ease of application, and more especially in their ease of adjustment, I consider the light, solid blade Tucker-McLean forceps far superior to the better known fenestrated blades. Having the blades applied as described, we reach the third point to be determined: Does the locking of the handles occur in the plane of the saggital suture? If not, further slight adjustment must be made, but by merely approximating and not locking the handles. The locking is delayed until the handles have been depressed as far as possible, in order to make them conform to the longest diameter of the head. This having been done, the handles are locked and, 4. the maneuver begins. The first step is the placing of the index finger of the opposite hand—i. e., the left in an R.O.P. and the right in an L.O.P.—gently on the posterior fontanelle. This is done so that the rotation of the head may be followed by the finger, and the procedure stopped if the head stops rotating. The head is pushed up slightly to remove it from its fixed position. Following this, by elevation of the handles of the forceps, as much flexion as is possible is obtained. The handles are then rotated through as wide an arc as possible, the thighs being widely separated. The pressure of the thumb and two fingers is usually sufficient. The rotation should be easy, and if more pressure than that mentioned is needed, a careful check-up of the diagnosis and the application of the forceps should be immediately made, as one or the other will generally be found at fault. No traction is made during the rotation, which is carried to the mid-line or even beyond, so that the head is hyperrotated to an L.O.A., to prevent a return to the R.O.P. when the blades are removed for reapplication. Then sufficient traction is made to fix the head in the new position, the blades are removed and reapplied, the right or posterior being applied first, again to hold the head anterior, in case the traction made was not sufficient to fix it firmly. All this is done with the patient under surgical anesthesia. She is then permitted to come out of the anesthetic to the extent that she will bear down with the pains, but is still unconscious and quiet. The baby is delivered by gentle traction exerted at the time of the pains, care being taken to unlock the handles between pains to relieve the pressure on the head. and with frequent checking of the position of the blades, in case of a slight slipping during the traction. When the head has advanced to the point where, by placing a finger on either side of the rectum, the chin can be grasped and held (see—"Ritgen's Maneuvre"), the patient is again deeply anaesthetized, the forceps removed. and the head delivered by extension procured by pressure of the fingers through the perineum, on the chin.

So much for the maneuver and delivery. Several points should be emphasized. First, the swinging of the forcep handles through the wide arc is necessary, so that, at the point of application, the blades merely rotate. In other words, they act as a pivotal point or free fulcrum which simply turns over. Here again, these particular forceps are of benefit, because their long handles permit the swing through the wide arc.

The idea of disangaging the head and completing the rotation before the use of traction is contrary to the maneuver as described by Williams and De Lee. The former rotates and makes traction simultaneously, while the latter advocates a partial rotation, a pause to relieve torsion on the bladder and pelvic tissues, more rotation, etc., which he calls the "Key and Lock" maneuver, until the rotation is completed. The above described procedure seems preferable. First, the rotation is accomplished with much greater ease if no traction is made. Second, I cannot see how a pause will relieve torsion, as the head is held in the advanced position, and will exert pressure as long as it is there. It would then seem wise to complete the delivery as soon as is reasonably possible, so that all the pressure could be removed, and the pelvic tissues could return to their normal positions. If this be the case, it would seem that the sooner the rotation was completed, the better. Furthermore, the rotation is usually accomplished with such ease, and the head moves so freely, that the amount of torsion must be extremely small.

Next, the use of traction. It should be borne in mind that all forceps work should be accomplished with as little traction as possible. Axis traction is preferable. In the article by Dr. Bill to which I have previously referred, he points out the fallacy in the idea that axis traction is only to be used in very difficult deliveries, and states that he uses it. But he modestly refrains from telling how he accomplishes it without the use of axis-traction forceps. He has perfected the so-called "Bill Handle", which fits on the Tucker-McLean forcep handles, and really makes them a modified axis-traction forcep. The beauty of this handle is that it has a guiding mark and pointer. When the force is applied, the direction of the force is always in the proper plane as long as the pointer lies along the line. This assures proper pull on the handles, and it is surprising to see how far off the correct line one is when one uses plain hand traction. This is generally due to beginning to extend the head too soon, or by extending it too rapidly.

The early removal of the blades prevents excessive stretching of the outlet, and helps to prevent lacerations.

Two important points in regard to the use of the Tucker-McLean forceps are first, that they will slip off the head if too great traction is made, and so may help to prevent possible intracranial injury, and second, that there is practically never any marking of the baby following their use. This is certainly a point which cannot be over-emphasized. Also, because of the narrowness of the blades, there is less stretching of the vagina and outlet, and less laceration of the vaginal walls.

In concluding I would repeat that the Scanzoni maneuver is not to be attempted by one not thoroughly familiar with the use of forceps. But in the hands of one who is, and with the use of the light, solid blade forceps, I believe it to be a procedure which changes the occipito-posterior presentation from a potential obstetrical calamity to a comparatively simple operative delivery, with practically universal good results to both the mother and the child.

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EXFOLIATIVE DERMATITIS: THE APPROACH TO ITS PATHOGENESIS*

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The cutaneous picture known as exfoliative dermatitis is "characterized by dry scaling dermatitis which is generalized and tends to become universal" (Pusey⁽¹⁾). It is not the purpose of this paper to discuss the minutiae of cutaneous description which are so well detailed in many texts of dermatology, but to present in brief a plan of approach for the practitioner endeavoring to ascertain the cause or background for cases of exfoliative dermatitis.

Dermatologic textbooks, for the most part, have not, in the past, made much of an attempt to classify exfoliative dermatitis on the basis of its etiology. The chief classifications have been on the basis of morphologic differences. Much has been said about "idiopathic" exfoliative dermatitis. We feel that in the majority of cases which have been classed as the idiopathic type, there has been a failure to search for the cause in the correct way or in the right channels.

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There are certain definite differential diagnostic procedures which if properly applied and interpreted will usually reveal the causative agent or specific disease entity. These diagnostic procedures are not vague or mysterious; they are common to all branches of medicine: the history, the general examination, laboratory investigations, and observation of the course of the disease.

The following is a list of the etiologic or entity groups into one or the other of which most cases presenting this cutaneous picture can be placed:

1. Dermatitis medicamentosa (due to injected, ingested, inhaled or absorbed drugs).
2. Dermatitis venenata (due to external irritants).
3. Exacerbations of benign dermatoses.
4. Lymphoblastoma.
5. Sepsis.
6. Rare entities.
   - a. Ritter's dermatitis exfoliativa neonatorum.
   - b. Savill's dermatitis exfoliativa epidemica.
   - c. Brocq's congenital ichthyosiform erythroderma.

I. DERMATITIS MEDICAMENTOSA

The chief drugs which when injected, ingested, inhaled or absorbed may produce a toxic dermatitis often eventuating in exfoliation are the following:

a. Arsphenamine. The great majority of cases of exfoliative dermatitis seen today are from members of the arsphenamine group. Sulpharsphenamine has been held to be the most cutanotoxic, but as it is not employed nearly as frequently in practice as neo-arsphenamine, old arsphenamine (salvarsan) or bismarsen, it is not the cause of nearly as many of the cases seen in practice as the others of the group. After one or several injections. the patient complains of itching of his skin. This should be a warning sign, and although the skin may appear normal, if the pruritus cannot be accounted for by some other cause, the arsphenamine should be stopped. Many of the cases that complain of pruritus will be found to present a maculo-papular morbilliform bright erythema, especially over the forearms, wrists, ankles and about the flanks. Many of them also have conjunctival injection and puffiness about the eyes, often preceded by and accompanied with fever of 101 to 104 degrees (so that the objective differentiation from measles is difficult). Leucopenia may even be found.

We have frequently seen this early maculopapular toxic arsenical rash misinterpreted as an exacerbation of the activity of a patient's syphilis, more arsphenamine administered, and the patient promptly placed in the group of those dangerously ill, with generalized anasarca, terrific exfoliative dermatitis, and frequently other acute signs of arsenical poisoning—toxic hepatitis with jaundice, encephalitis, nephritis, or depression of bone marrow function (purpura, agranulocytosis, or aplastic anemia).

The examination of the skin itself at the bedside offers no definite lead to the conclusion that one of the arsphenamines has been the cause. One who has seen several of these cases may readily suspect it; the strongest point in the etiologic diagnosis, however, is the history of injection of one of the arsphenamines. Some patients. even with their skin in a terrible state, will deliberately misrepresent the facts, hoping to conceal the fact that they have had treatment for syphilis. When this occurs, or the information at hand does not fit with a strong clinical suspicion, laboratory search for arsenic in the exfoliated scales, the hair, or the urine, is worth while.

b. Fowler's solution, arsenious acid (as_2o_3), sodium arsenite, stovarsol (acetarsone), sodium cacodylate, and asiatic pills are representatives of the pentavalent type of arsenic. These drugs cause exfoliative dermatitis much less commonly than the arsphenamines or trivalent arsenic. The diagnostic points here again in ascertaining the cause are the history and laboratory search for arsenic. Michael(2) reported a case of exfoliative dermatitis due to stovarsol and found six others in the literature. Pusey(3) had a case due to sodium cacodylate. Halloran(4) found the causative agent in another patient to be arsenic in the wall paper coloring. We have seen another patient with a marked dermatitis exfoliativa apparently due to arsenic in wine, the grapes from which the wine was made having been frequently sprayed with an arsenical compound.

c. Mercury. This drug, ingested, injected, inhaled as vapor, or absorbed through the skin, may rarely produce a toxic exfoliative dermatitis which is practically always accompanied by the other signs of mercurialism (stomatitis, enteritis. nephritis) and may go on to death. Again—the cutaneous findings are not specific—the history, other physical findings characteristic of mercury poisoning, or the laboratory finding of mercury in the excreta, are aids in diagnosis.

d. Bismuth. This drug, injected intracuscularly in the treatment of syphilis, is rarely the cause of exfoliative dermatitis. It is apparently more often the cause of a less distressing type of eruption which occurs on the trunk, is pigmented papulo-squamous in type (resembling a persistent slowly-involuting pityriasis rosea) (Skolnik and Aleshire(5)). When exfoliative dermatitis does occur from bismuth, it is apt to be severe and has proved fatal (Liebers(6)).

e. Phenobarbital (luminal), now a commonly used soporific and anti-convulsive, is not infrequently the cause of dermatitis medicamentosa. Menninger(7) found 41 reports in the literature and added three more of his own. From one to three per cent of patients taking phenobarbital develop a toxic eruption, usually scarlatiniform or morbilliform, and occasionally these go on to exfoliative dermatitis, especially if the cause is not suspected and the drug is continued. About 50 per cent of the cases of luminal eruption have fever; in our experience this is often quite high. The morbilliform type of eruption has been encountered most frequently by us. Often there is a somewhat violaceous hue to the eruption instead of the bright pink one sees in measles itself.

f. Gold. The use of gold compounds in the treatment of lupus erythematosus, tuberculides, lupus vulgaris, and in some instances systemic or pulmonary tuberculosis has naturally led to many toxic reactions. These have been well summed up by Driver and Weller(8); their review of toxic gold reactions uncovered instances of exfoliative dermatitis, some with fatal outcome. Talati(9) encountered exfoliative dermatitis in using sanocrysin, one of the many gold containing drugs. Anyone who uses gold compounds in his therapeutics should watch carefully for an erythematous rash, as well as for fever. jaundice or stomatitis. We have found that stopping the injections of gold with the first possible toxic sign, plus eliminative measures, has resulted in prompt involution of toxic symptoms and have had no personal experience with exfoliative dermatitis from this source.

g. Antitoxin. The eruptive phenomena which follow the administration of horse-serum occasionally eventuate in exfoliation. Not infrequently the initial rash (urticarial or scarlatinoid) appears about seven days after the serum injection, the redness and cutaneous edema become widespread, and as regression of the erythema takes place, exfoliation occurs. Confusion may easily arise when diphtheria and scarlet fever have been present together; careful observation of the development of the eruption is the best means of avoiding this confusion. Fortunately this is one of the forms of exfoliative dermatitis which is of short duration.

h. Quinine, antipyrin, and practically any of the group of the coal-tar derivatives occasionally result in a toxic erythematous eruption which may go on to the stage of a typical exfoliative dermatitis if the drug is not stopped. The history of the ingestion of the drug, clearing of the eruption on removal, and recurrence of the eruption upon re-administration, are the strongest points in determining the causative agent.

II. DERMATITIS VENENATA

A dermatitis from external irritants is, when acute, most often characterized by redness, edema and vesiculation. When the cutaneous insult is repeated and widespread, a "dry scaling dermatitis which is universal and tends to become generalized" (exfoliative dermatitis) may result.

We are all familiar with the exfoliative dermatitis seen in the woodsman from prolonged exposure to the Rhus family (poison ivy, poison oak, sumac). More and more frequently do we encounter industrial dermatoses which fall into the morphologic picture under discussion—most of them caused by machine oils, volatile oils, paints. etc. By far the most common cause of exfoliative dermatitis from external irritation, however, is the application of drugs to the patient's skin in the treatment of other dermatoses. The most common offenders are: chrysarobin (used in psoriasis), sulphur (in seborrhea corporis, parasitic diseases, etc.), tar in its various forms (eczema), picric acid solution (used as skin preparation in surgery or for burns). Fox(10) has recently reported a case of exfoliative dermatitis due to butysin picrate ointment; we have seen a similar case.

Occasionally the offending irritant is very difficult to find. In this case the patch or contact test applied to a small area of the patient's normal skin (after recovery on removal from his usual surroundings) is of great aid in determining the pathogenesis. In many instances, however, the history of contact or application and observation of type of onset, spread and involution or recurrence are the most helpful points in finding the cause of the dermatitis.

III. EXACERBATIONS OF BENIGN DERMATOSES

There are a few common conditions and one which is rare, which occasionally exacerbate into a widespread exfoliative dermatitis. Most frequently there is a definite cause: the application of an irritant drug in the hope of benefiting the chronic benign dermatosis. Apparently, however, any of these conditions may spontaneously go into a stage of exacerbation, no cause being found. We suspect that the cause is not found because of failure to look for it in the right way, in most instances.

Psoriasis occasionally flares into the morphologic realm of dermatitis exfoliativa. It, again, usually does so because of an irritant application (chrysarobin. tar, oil of cade). When seen in a well marked exfoliative stage, no landmarks of a pre-existing psoriasis may remain (except possibly nails?) and the history of a previous chronic recurring scaly eruption over the bony prominences or of application of one of the above irritants is helpful.

Lichen planus occasionally exacerbates into the general exfoliative state—again due frequently to external applications, perhaps sometimes due to mercury or arsenic ingested or injected in an effort to induce involution of the primary eruption. The most valuable aid in formulating a cause and effect diagnosis here is observation: seeing the patient in the early stage of the lichen planus and watching its spread and final eventuation in a temporary period of exfoliation. Observation not having been possible, the history of a papular pruritic violet-colored eruption on the flexor surfaces of the wrist or the shins, genital pruritus, etc., may give some lead to the pre-existing condition. In many instances the finding of white, shiny, criss-cross line patches on the buccal mucosa or tongue will quite definitely settle the problem as an exacerbation of lichen planus.

Seborrhea corporis may suddenly become widespread and change to a typical exfoliative dermatitis. The most common cause, again, is topical application, sulphur or a patent medicine being frequent offenders. Seeing the patient in the seborrheic stage, greasy scaling over erythematous patches, having predilection for the scalp, sternal region, interscapular area, axillae and pubes, is the best approach to the etiologic question. Failing this, it will often be found imperative to withhold an opinion as to cause—usually the patient will again present himself, months after the exfoliative stage has passed. with a recurrent seborrhea corporis.

Eczema frequently becomes a generalized exfoliative dermatitis, due either to widespread irritation from topical application or to an exacerbation from an increased allergic load (food, upper respiratory infection, erupting tooth). The family physician is his own and frequently the dermatologist's best aid in pointing out the pre-existing type of eruption which was present. Even when there is widespread exfoliation, when eczema has been the background, patches of erythema, edema, and weeping or oozing with serous crusting, will often be found over the cheeks, chin, forehead, anticubital fossae and popliteal spaces—this distribution and type of crust being quite pathognomonic of eczema.

Pityriasis rubra pilaris (Devergie) is a very rare disease of unknown cause which occasionally becomes generalized for a short or long period of time and may present the typical picture of exfoliative dermatitis. The only way in which a patient can be placed in this group is by observation before or after the widespread exfoliative stage—when more quiescent, this entity presents a quite typical picture—symmetrical patches of dry follicular horny papules, often over the scapulae, sacral region, elbows, knees, neck and back of the first phalanges of the fingers. Curiously enough, the scalp usually presents diffuse loose scaling, as do the palms. and during the clearing of the exfoliative stage the tendency to symmetry is usually retained in the involuting patches.

IV. LYMPHOBLASTOMA

Those diseases of the skin which are included in the category of lymphoblastoma are leukemia cutis, mycosis fungoides. Hodgkin's disease and lymphosarcoma. The first one, leukemia cutis, in most cases presents an extensive exfoliative dermatitis, in patches at first, becoming universal. The color is often a deeper red or even a more bluish hue than most other types of exfoliative dermatitis. It is symptomatically characterized by terrific pruritus. The superficial lymph nodes are found to be much enlarged, firm, plainless and usually discrete. The diagnosis is best settled definitely, however, by three laboratory procedures, any one of which is specific if showing lymphoblastomatous change: (1) Biopsy of the affected skin—the usual findings being a definite band-like infiltrate of lymphocytes and lymphoblasts in the sub-papillary layer of the corium, associated with epidermal atrophy and exfoliation. (2) Biopsy of the enlarged superficial lymph nodes—these will usually show leukemic foci, if the dermatitis falls in this group; a positive microscopic finding may often be had from the nodes years before the microscopic skin or blood picture is positive. (3) The blood findings—strikingly enough, the white blood cell changes in leukemia cutis are the least likely to be found specific. Often the total white count and differential count are normal for years, while the leukemic process is a more or less tissue-fixed yet proliferative malignancy in the skin and lymph nodes. The chief aids in ascertaining the causative background for the "dermatitis" in this not uncommon leukemia cutis are then progressive skin changes, terrific pruritus, enlarged firm superficial lymph nodes and biopsy findings.

Mycosis fungoides in the pre-fungoid state may and often does present as a markedly pruritic exfoliative dermatitis, which finally subsides, to be followed by the development of infiltrated placques, changing later to tumors which necrose and slough in the center. The early biopsy of the skin taken in the pre-fungoid state, is usually indistinguishable from the picture of leukemia cutis—observation of the course of the disease being necessary to differentiate the type of lymphoblastoma.

Hodgkin's disease is often accompanied by pruritus and occasionally by a papular pruritic eruption (prurigo). We have seen one case of general exfoliative dermatitis in which biopsy of the skin showed a typical Hodgkin's type of infiltrate in the true skin (fibroblasts, eosinophiles, Dorothy Reed cells) as well as in the lymph nodes.

So far as we know, lymphosarcoma is not associated with exfoliative dermatitis.

V. SEPSIS

Streptococcal septicemia, or perhaps circulating streptoccal toxins generated in a focus of infection, may cause widespread dermatitis with exfoliation. The erythema and exfoliation of scarlet fever fall in this category, as do the more common scarlatinoid erythemas from streptococcus infections of a strain other than that isolated by the Dick's. Cases of this type are, of course, of only a few weeks duration usually, and the causative agent is readily suspected by the physician through experience with its epidemic nature, the symptoms and physical findings. Sabourand(11) and Pether(12) have recently contributed to our knowledge of this type of exfoliative dermatitis by their case reports.

VI. RARE ENTITIES

a. Dermatitis exfoliativa neonatorum (Ritter's disease) begins usually from one to five weeks after birth. Most often an erythema appears about the mouth, which spreads rapidly over the whole body, with exfoliation of the outer layers of the epidermis, exposing red glazed patches of the mucous layer, the resulting appearance suggesting a scald. Vesiculation is not common. Favorable cases last only seven to ten days, the epithelium regenerating rapidly. In many cases the general health and nourishment are not affected. Death has occurred from complications or exhaustion (50% of cases). The chief diseases this rare entity may be confused with are (1) Pemphigus foliaceous: a fatal disease, not characterized by regeneration of epithelium as is Ritter's; (2) Miliaria; (3) Bullous impetigo; (4) Exudative dermatitis. As Ritter's disease begins, it may closely simulate any of these latter three conditions, but the rapid spread of the erythema and onset of exfoliation within a few hours change the picture, so that observation is quite necessary in establishing the diagnosis. We are in accord with the views of Guy and Cohen (13) that this disease is an entity and not a variant of pemphigus or impetigo.

b. Dermatitis exfoliativa epidemica was described by Savill in 1891. Many patients in London institutions became afflicted with exfoliative dermatitis, most of them not having premonitory symptoms, a few having anorexia, vomiting, diarrhea, or sore throat. We suspect that the causative agent may have been streptococci or arsenic. The paucity of recent similar reports argues against this disease as an entity.

c. Erythrodermia congenitale ichthyosiforme was first described by Brocq in 1902, and is not such a very uncommon condition, dermatologic meetings and clinics frequently presenting typical cases, often two or more members in the same family. The condition begins usually in infancy and persists into the adult years, some cases, however, being lessened in severity or apparently spontaneously cured after puberty. When the condition is widespread it presents as a generalized scaly erythrodermia, and if the degree of involvement is marked (as it often is in winter) the morphologic picture may not differ from other cases of exfoliative dermatitis. We feel that congenital ichthyosiform erythroderma is a cutaneous developmental disturbance which tends to be familial but not hereditary, the dyscrasia affecting the true skin or corium as well as the epidermis which is chiefly affected in the commoner and non-erythematous ichthyosis. The history and the course of the disease are the chief diagnostic features of this disorder; it is to be distinguished from eczema by the absence of weeping.

EXPLANATION OF MISSING TERMS:

We have omitted any discussion of Wilson, Hebra or Darier types of exfoliative dermatitis, as their differentiation of types was chiefly on a morphologic basis; this is an attempt at classification according to etiology. We are in accord with the view of Barney[(14)] that the term "pityriasis rubra" of Hebra should be dropped as several etiologic agents have been shown to produce this cutaneous picture—namely, exfoliative dermatitis.

We have also not discussed Leiner's erythrodermia desquamativa in this group, as we feel it is merely seborrheic dermatitis occurring on the infant skin.

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THE DIFFERENTIAL WHITE BLOOD CELL COUNT*

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PART I

It is the intent of the writer to limit this communication to a survey of the knowledge relative to the differential leucocyte count as it pertains to the question of prognosis in disease, and to the means of gauging the degree of toxemia. It is to be further understood that many diseases call forth more or less characteristic quantitative leucocytic reactions which are highly diagnostic and these particular reactions must be considered when certain following inferences are made. A single differential count should be treated as a single picture of a constantly changing blood state, and if worthwhile deductions are to be drawn a series of counts at different phases must be made. Every count must be considered in the light of two fundamental processes; that is, the delivery of new cells into, and the removal of leucocytes from the circulating blood. Herein perhaps lies our failure to understand some blood pictures because so many facts concerning these processes are not known. But in the face of this lack of knowledge, clinical trial has established the place of the differential blood count in the study of a given case. Gulland[(1)] in his Harveian Lecture, "The Circulating Fluid," makes this statement: "I look forward to the time when the differential count will be more important than the auscultation of the heart."

For the proper estimation of the various blood cells, a good technic is of primary importance. For practical purposes slides can be used, and it is necessary that these slides be smooth, clean, fat-free and dust-free. Many technicians employ some cleansing solution, as concentrated acid or bichromate acid mixture. However, ordinary bon ami will be found to be very desirable. After this cleansing the slides should be washed, then rinsed in distilled water, and ethyl alcohol. They may be either dried and stored in boxes, or put in a bath of ethyl alcohol to which a small amount of ether is added. A drop of blood should be collected on the slide after a free flow is established from a deep puncture. Margination of the smear can be overcome if a smaller slide is used for smearing, as Schilling[(2)] recommends. This is important because it will prevent to a certain measure the collection of the larger cells at the margin. The smearing plate should be held on the drop of blood at about a 30 degree angle until there is an even distribution and then pushed forward to draw the blood out, so to speak. If the smearing plate is held more nearly perpendicular and moved more slowly, a thicker film is obtained. The name of the patient and the date can be written on the dried blood film with a broken pen-point and in this way a permanent tabulation is made.

There is some difference of opinion as to which is the better stain. For practical purposes the Wright's stain is highly satisfactory. In 1910 Wright clarified his technic and since then there have been other modifications. However, the Giemsa stain brings out better nuclear detail. The chief difficulty with staining lies in the differences of the H ion concentration of the diluting fluid and stain, and the length of time of staining. Since the dye is a salt of eosin, an acid substance, and alkaline methylene blue, a basic substance which is dissolved in methyl alcohol and to which water is added to increase dissociation into the respective radicals, it can readily be seen that staining differences may be very great. But since the use of a buffer solution as recommended by Haden(3), more uniformly stained smears can be obtained. The phosphate buffer solution with a PH equal to 6.4, which corrects the chemical reaction more or less satisfactorily, is made as follows:

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*Read before the Omaha-Douglas County Medical Society, October 25, and before Lancaster County Medical Society, November 1, 1932.

Primary potassium phosphate (KH_2PO_4)	6.63 gms.
Anhydrous secondary phosphate (Na_2HPO_4)	2.56 gms.
Distilled water to make	1000.00 c.c.

A good stained slide can be obtained by using this technic: Place twenty drops of Wright's stain over the blood smear for one minute to insure proper fixing and preliminary staining, and then add an equal number of drops of the buffer solution, and allow mixture to stand for four to five minutes. With each new supply of buffer and stain one should by trial and error find the proper length of time to stain and the definite action of the buffer solution.

For practical purposes and for a general consideration of the conventional division of the leucocytes, it is best to consider them under three main groups; namely, (1) the granulocytic leucocyte, or perhaps better termed granulocytes; (2) the lymphocytes; and, (3) monocytes. This conventional grouping is widely used.

The granulocytes can be divided into three groups, depending upon the specific staining reaction of the granules; that is, neutrophils, basophils, and eosinophils. From a clinical standpoint there seems to be no real advantage in classifying the lymphocytes according to their size, as small, intermediate, and large. It has been accepted by many investigators that these three groups are different stages in the life cycle of this cell type. Further, the transitional cells and the large mononuclears make up the monocytes.

There is still considerable dispute as to the origin of these various cells. The "unitarians," or monophyletists, as Maximow(1), consider that all cells are derived from a single cell. Maximow has called it the hemocytoblast, while Pappanheim used the term lymphoidocyte to designate this cell, which is lymphocyte-like in character. As a result of his careful observations on lymphocytes, Wiseman(5) came to the conclusion that at least a portion of the so-called lymphocytes arise, mature, function, and die as lymphocytes without differentiating into other cell types. Ehrlich, Turk, and Naegeli believe in a dual origin and distinguish sharply between myelogenous and lymphatic cells. Finally, Schilling(2) believes that there are three respective ancestors. He sets up in addition to the myeloid and lymphoid groups, a third class, which consists of genuine monocytes or histocytes of Aschoff and Kiyono. That is to say, the reticulo-endothelium is the true source of the monocytes. This grouping is accepted by many American authors, and there is accumulating evidence that this classification is more nearly correct.

Clough(6) has given a fine summary to this perplexing problem in a recent article on monocytic leukemia. He states that practically all investigators believe that all types of leucocytes have a common origin from cells in the embyronic mesenchyme, which are regarded as primitive reticulo-endothelial cells. Also these cells at birth have already differentiated into types of tissue seen in the adult, the myeloid, the lymphoid, and (according to many investigators) the reticulo-endothelial tissues giving rise to the granulocytes, lymphocytes, and monocytes, respectively. He adds, however, that there are some who believe that even in the adult there are primitive reticulo-endothelial cells which in case of need can develop into any one of the types of leucocytes, according to the character and intensity of the stimulus they may receive. His belief is that the fundamental point in dispute really concerns the state at which this process of differentiation becomes irreversible. The monophylectic school contents that this occurs late in the development of the cell and that the transformation of lymphocyte into monocyte or vice versa can take place. The members of the polyphyletic school counters with the belief that this process becomes irreversible at an early stage, and that such a transformation cited above is not possible. Clough infers that this latter opinion stands on somewhat firmer ground.

However, Doan(7) states that in the face of our present knowledge there is some justification for both positions. That is, there is good evidence presented that forms the basis for the contribution that "lymphocyte-like" cells may differentiate into other specific definitive cell types; and, on the other hand, there are those who have seen no evidence of transformation in a large proportion of the small "mononuclear" round cells, which exist in blood and tissues. Hence neither hypothesis may be considered as mutually excluding the other. The knowledge of leucocyte origin adds to one's appreciation of a blood picture;

however, for practical purposes we need not consider it further.

For many years there have been various attempts made to devise ways and means for gauging the degree of toxemia in patients suffering from infectious diseases. Here again it may be reiterated that what the laboratory may give in the way of added help is of no great value in many cases after a careful clinical study has been made by the use of other means. But there has been found no greater index as to the reaction between host and the disease than qualitative and quantitative study of the blood smear. It is easy to tell that an individual is sick with tuberculosis but it is another problem to tell how sick he is. With the proper use of the differential count this can be reasonably well determined. It is of great help in foretelling of complications. Without it we cannot intelligently manage the convalescent patient. In view of these pertinent facts we want to direct your attention to a more or less detailed study of certain fundamental cellular reactions as produced by an infection within the body. This commands rather positive knowledge of the morphology of the various white blood cells, and also knowledge of what constitutes maturity of the cells.

Myeloblast (Naegeli) is the mother cell of granulocytic types and is not present in normal blood and also is scarce in normal marrow. It is best studied in myelosis. There is a narrow band of a deep basophilic protoplasm. The outer rim in most cells is sharp and distinct. The nucleus is large and contains two to six nucleoli. The chromatin forms small meshes, which are more or less equally distributed and lightly stained, giving it a homogenous appearance. There is no clear perinuclear area. This fact is of some importance as a differential point.

Promyelocytes are the second distinct cell group in the series of granulocyte development. Protoplasm is broader, basophilic, and contains to a greater or less extent azurophilic granules. They are rather coarse and, according to Decastello, are not related to the mature granulation. The nucleus is not so homogenous and takes on a more thread-like reticulation. The nucleoli are present but not likely to be as numerous as are found in the myeloblast.

Myelocyte - protoplasm depends upon the stage of development. According to Decastello(8) the ripe protoplasm and granulation seem to develop more or less concomitantly, and the site of primary origin is in the perinuclear area. The various stages of development can usually be observed by studying a myelogenous leukemia smear. As development continues the oxyphilic mass of protoplasm with definite granulation increases until whole cell is mature. That is, the basophilic protoplasm with immature azurophilic granulation of the promyelocyte is replaced by the oxyphilic protoplasm with mature granulation.

The nuclei are of variable shapes. They may be round, oval, or slightly indented. It is relatively large. The nucleus is more compact, and the chromatin takes on a more thread-like appearance. Nucleoli are generally very indistinct or absent.

The young metamyelocyte of Pappenheim, or juvenile type of Schilling lies between the myelocytes and the more mature types found normally in the blood. The protoplasm and granulation are mature The nucleus is still quite large. generally sausage and horse-shoe shaped. The chromatin fibers are not pronounced. It is lighter stained and appears as if it were somewhat edematous. In many cells, if well stained, according to Schilling(2) nucleoli may be seen in the end bulbs. These cells do not normally appear in the blood stream. In the normal state some mechanism prevents their entrance into the streaming blood.

The rod, or stab forms—older metamyelocytes—make up 3 to 5 per cent of total leucocyte count. Protoplasm and granulation are mature. Nucleus more compact and definitely more narrow than the previous group. Marked differences of opinion arise over these two cell groups, and this difficulty in all probability has done much to discredit the Schilling hemogram. Any method that is expected to have a wide usage in medicine must be relatively easy to carry out. To be sure the change from a juvenile to a stab form is a gradual one, and there is no sharp dividing line, but if the nuclear change is learned, as pointed out by Schilling(9), there need be no great trouble in distinguishing the two groups.

The nucleus takes various forms, may appear as "S," "T," "U," or "V," and is often wormlike. Chromatin strands are more pronounced, and the nuclear structure resembles that of a segmented neutrophil somewhat. No nucleoli are observed.

Neutrophilic segmented leucocytes—make up about 65 per cent of total leucocyte count. They are segmented nuclear forms developed from the single round nuclear cell. The granules are medium sized, evenly stained, and evenly distributed in the normal cell. The protoplasm takes an oxyphilic stain. The nucleus is rather condensed, and exists as course skeins or filaments. The nuclear segments are always connected by a filament, and are connected in a rosary fashion rather than from a central point.

Doan(7) has said that the only necessity for distinguishing various stages in this maturation period and christening them with names is to facilitate an appraisal of the acuteness of the process, in a given case of myelogenous leukemia or severe infection.

The mast cells and eosinophilic cells have a similar masturation but have some definite individual characteristics. But because of their relative unimportance in this presentation, further description will be omitted.

The lymphocytes account for about 25 per cent of the total leucocytes in health. It is quite generally accepted that their origin is in the lymphoid tissue, chiefly from the lymph glands. In the usual case they offer very little difficulty in differentiation. The protoplasm stains a delicate blue, and may or may not contain azure granules. These granules have given rise to much debate and as yet their true nature is not well understood. The protoplasm according to Decastello(8) has a typical structure. It appears as a series of over-lapping reticular rings. Often a perinuclear clear zone is seen that fails to stain. The nucleus in most instances is round, often times indented, and will occasionally show a folding or overlapping of one part onto the other. The chromatin material is more compact and is generally observed as coarse clumps.

Many investigators tabulate the various cell sizes as large, intermediate, and small. There is no real advantage in doing this, and for practical purposes they may be considered under a single heading. Decastello(8), Schilling(9), et al are of the opinion that the larger cell is the younger cell. The investigations of Wiseman as cited by Doan(10) contradicts this opinion. He arrived at the conclusion that preparation of the blood film so distorted the cells that size does not bear an actual relation to the living cells. The work of Wiseman(11) on the maturation of the lymphocyte opens up new probabilities in the understanding of lymph node dyscrasia. He found that there is rather a fixed proportion of lymphocytes in the normal case; that is, the total lymphocyte count is constituted by 5 per cent young forms, 49 per cent mature forms, and 46 per cent old forms. These figures are the average percentage.

The monocytes make up about 6 to 8 per cent of the total white count. They are the largest cells of the blood. The protoplasm is much broader in comparison to the other cells. It is usually pale greyish-blue in color, and can be well described by saying that it is a "muddy" blue color. It usually contains a fine, azurophilic granulation; however, some of these cells may not show definite granules. The nucleus may be oval, indented, rod-shaped, or even show variable degrees of polymorphism. The nuclear chromatin appears in smaller threads and clumps, giving the nucleus the appearance of a fine network with patches of condensation. Its staining qualities are not as intense as found in other cells. This cell retains the power of division, and is often seen in mitosis in the circulating blood. The life cycle of this cell has apparently been established but it has no special bearing on our problem so will not be considered further at this time.

(To be continued.)

THE PREVENTION OF CANCER OF THE CERVIX*

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Two generations of surgeons have waged an unrelenting warfare against cancer of the cervix. They have carried their operative measures to a limit beyond which they cannot go. With all their skill in technic they, at best, have obtained a permanent cure in but one out of four cases. Radiologists, with the x-rays and radium, have shown no better results though it may be said of the radiologist that his efforts have resulted in prolonging life and in providing comfort that the surgeon has been unable to do. He has an immediate mortality of less than two per cent whereas the mortality in the hands of the surgeon ranges from ten to twenty per cent. Little, if anything more, can be expected of the surgeon in the cure of this dreaded malady and as for irradiation therapy all we can say is that year by year ground is gained though it be ever so small.

The difficulty is not with surgery and not with pelvic irradiation. Both will be effectual in the early stage of cancer but we seldom see these cases in the early stage and there is the rub.

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*Read before the Fillmore-Saline Counties Medical Society, December 12, 1932.

I no longer do the radical operation for cancer of the cervix and in this I am conforming to the rank and file of gynecologists the world over, though there are a few notable exceptions. I find myself increasingly confident of the beneficient effects of radium when properly applied. It is the remedy *par excellence*, in advanced cases. As a palliative measure in checking discharges, relieving pain and in restoring a condition of general well-being for a time it has no equal. In a small percentage, (7-10), even advanced cases are permanently cured, and by advanced cases I mean those in a stage that are manifestly non-operable. But we are not content with curing twenty-five per cent of all cases. fifty per cent of early cases and seven to ten per cent of advanced cases. In our quest for that which will save a larger proportion of the 13,000 women who are dying annually in the United States from cancer of the cervix we turn to well known preventive measures which in my judgment will prevent the occurrence of ninety per cent, if not ninety-five per cent of all cancers of the cervix. Happily it is a field of endeavor that is well within the province of the general practitioner for it is at the time of delivery or shortly thereafter that these prophylactic measures should be applied. Obstetrics is the general practitioner's specialty, the bulk of obstetrics is under his control and it is squarely up to him to master his problems. I would not be understood to say that there is no place for the highly trained obstetrician. He deserves a more exalted position in the field of medicine than he has heretofore enjoyed. There are many problems arising in the practice of obstetrics that call for skill and experience that can only come from a lifetime of devotion, but these problems do not present themselves in more than two per cent of all obstetric cases. The remaining ninety-eight cases in a hundred should and can be well cared for by the general practitioner provided he has had the training to which he is entitled.

It is not extravagant to say that more than half of all gynecological ailments would never arise if parturient women were to receive the full measure of obstetric service. Infections which lead to lasting ailments would be prevented, lacerations would be repaired while fresh, subinvolution would not occur and most of the displacements would be forestalled. The puerperium does not end with the lying-in period, nor does it end at the conventional time of six to eight weeks after delivery. It ends when the mother is restored to a normal condition. This may take days, weeks or months and possibly years.

James Ewing writes: "Cervical cancer is a disease of childbearing women and is usually preceded by cervical lacerations and irritating cervical catarrh." This is a truism that has long been known and is but another way of expressing the one thing that we know of the cause of cancer, i. e., that long continued irritation predisposes to the development of cancer. All authorities agree with the dictum that cancer rarely, if ever, develops directly out of healthy tissues but is the outgrowth of pre-existing lesions. There can be no greater services on the part of the physician than the recognition of these precancerous lesions, wherever located. But recognition is not enough. There must be a keen sense of appreciation of their import, coupled with such means of relief as will effectually forestall the development of cancer. Not until the practicing physician becomes cancer-minded in the routine of physical examinations will the ravages of cancer be stayed. He should at all times be alert to the possibility of precancerous lesions and he is not to under-rate their significance. Because his patient gives the appearance of robust health he is not to infer that she is free of cancer. She may be free of all symptoms and even gaining in weight and yet have an advanced cancer with visceral metastasis. I have frequently observed progressive increase in body weight in the early stages of cancer.

The symptoms of cancer in the earliest stage are non-existent—no discharge, no loss of blood, no pain, no loss of weight. Cancer of the cervix in its earliest stage is a microscopic disease and not a clinical entity. A lacerated cervix associated with chronic cervicitis passes to the malignant stage with no warning. This being so it follows that the physician should look with suspicion upon a cervix that presents any deviation from the normal.

"The key-man in cancer diagnosis and in cancer control is the general practitioner," says Ewing, "unless he is constantly alert and fully competent to recognize the early signs of cancer. detect pre-cancerous diseases and lesions, and even to discern and warn against cancer forming habits, all subsequent medical service is handicapped or rendered futile."

The eradication of precancerous lesions is preventive medicine of the highest order. We are not curing more than 25 per cent of cancers of the cervix because more than half such cases come to us in the advanced stages, but we can, to a large extent, prevent the incidence of cancer of the cervix by efficient management of precancerous lesions. These precancerous lesions often exist without giving rise to symptoms and this fact suggests the imperative need of systematic routine vaginal examinations. I have lately seen, with Dr. George Haslam of Fremont, one of the earliest cancers of the cervix that has ever come under my observation. This case complained solely of gallbladder disease but the routine physical examination disclosed a suspicious erosion of the cervix and a biopsy confirmed the suspicion of cancer. Periodic examinations of women who have born children offers the most for cancer control.

I do not believe that an uncomplicated laceration of the cervix is a precancerous lesion. No cancer has ever been reported arising out of such a condition. But an eroded cervix that is constantly bathed with an irritating, acid secretion is most certainly a precancerous lesion. It is doubtful if cancer ever develops in a cervix that is free from such irritating influences.

I subscribe to the sentiment expressed by Huggins that cauterization of the cervix, if properly used, will save many lives. Huggins has treated 2,985 chronic cases by this method and in no instance has a cancer developed subsequent to the cauterization. Many other authorities have had like experiences.

The technic of cauterization is simple. No anesthetic is required. The one desideratum is the removal of all diseased tissue and this implies thoroughness. Yet it is well within the scope of the general practitioner in the routine of his office practice. One word of caution—if the tissues are the least friable, and bleed readily upon manipulation, a biopsy should be made for microscopic examination. Friability and bleeding speaks for cancer with almost absolute certainty.

We have laid down the dictum that chronic cervicitis is a precursor of cancer and demands radical treatment for the prevention of cancer. And we ask—how can we recognize the early stages of cancer, at a time when there are no symptoms? The imperative need is first that the physician should have ever in mind the possible presence of cancer. He should be cancer-minded. The second prerequisite to early recognition is the adoption of periodic health surveys. The cervix should be inspected in the late lying-in period and repaired if injuries have been sustained. Every childbearing woman should be subjected to such examinations at least yearly thereafter. At the onset of vaginal discharge, of whatever character, an immediate examination should be made. And, finally, there is need for educational opportunities. The lay public must be enlightened, the medical student and the practioner of medicine should have more and better instruction to the end that pre-cancerous conditions may serve as a warning and that cancer may be early recognized and promptly treated.

Should a lacerated cervix be repaired immediately following delivery? This same question was asked some seventy-five years ago in relation to lacerations of the pelvic floor. Under favorable conditions (hospital delivery, competent operator and assistants) there is no more reason for delay in the repair of the cervix than of the pelvic floor. I believe this will be the accepted practice in the near future. By so doing the cervix will be spared many unfortunate sequellae. Where conditions immediately following delivery are not favorable to repair of the cervix the operation may well be deferred until the eighth day of the puerperium. This is the so-called "intermediate repair." Where old scars from long standing lacerations exist it is well to defer the operation for a late period.

FIRST ANNUAL REPORT OF THE USE OF X-RAYS AND RADIUM BY THE TUMOR CLINIC OF THE CREIGHTON MEMORIAL ST. JOSEPH'S HOSPITAL*

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As a preliminary to the presentation of a summary of the cases which went through the tumor clinic at St. Joseph's Hospital during the fourteen month period ending December 31, 1932, a reference to the general increase in the use of radiation therapy throughout the world as well as the increasing indications for its use and a short discussion of the new equipment which has been added to our radiological department during that time may not be amiss.

A better understanding of the effects of radiation has resulted in an increase in the demands for this type of therapy in both superficial and deep lesions and the formation of cancer clinics in the leading medical centers throughout the world is proving the effectiveness of this type of therapy.

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The present status of radiation therapy in the treatment of malignancy in England, for instance, is well emphasized in the London letter published in the *Journal of the American Medical Association,* December 3. 1932, an extract of which follows:

"The report of the Medical Research Council summarizes the reports from research centers for 1931. The main lines of radium therapy at present are the treatment of cancer of the breast, mouth and cervix uteri. The rapid development of radium therapy is shown by the statistics collected from ten leading hospitals, none of which specialize in radium treatment. In 2,333 cases of malignant diseases, the percentages for the treatment adopted in 1931 were as follows: Surgery alone, 32.5; radium alone, 32.6; x-rays alone, 10.9; surgery plus radium, 9.6; surgery plus x-rays, 7.8; radium plus x-rays, 5.1; surgery plus radium plus x-rays, 1.5. Thus radium therapy, which is only emerging from its infancy, has already passed surgery in the frequency of its use."

In the above figures it is evident that 48.6% of the cases received only radiation while only 32.5% were treated with surgery alone. The balance received both radiation and surgery or in other words 65.5% received radiation as an aid in their management.

One is often inclined to think that only hopeless malignancies should be subjected to radiation therapy but such is not the case and if one considers the six major divisions of pathological processes as based on etiology he will readily admit that radiation therapy may be used as an aid in the treatment of selected cases in five of these six divisions which are as follows:

THE SIX MAJOR PATHOLOGICAL GROUPS

1. Mechanical or traumatic; fractures, dislocation, etc. minus.
2. Chemical or metabolic; toxic goiter, enlarged thymus, etc. plus.
3. Infections; T. B. glands, gas gangrene, carbuncle, etc. plus.
4. New growths; benign and malignant, plus.
5. Unclassified; Hodgkins, leukemia, etc. plus.
6. Mixed lesions; new growth with infection, etc. plus.

The above basic types of pathology encountered in every day practice are fairly comprehensive. The fact that the x-rays are used successfully as an aid in treatment in certain cases in five (marked plus) out of six of these groups is a true indicator of its present status in therapy.

From the above it is evident that every institution treating the sick should be equipped to treat with x-rays up to 200 kilovolts and to have available sufficient radium in needles with low radium content to meet the present day technical requirements for interstitial treatment; also heavily filtered tubes for cervix, rectal and other work. The equipment to meet these requirements at St. Joseph's Hospital consists of a 230,000 volts, 30 milliampere water cooled installation having in addition a constant reading iontoquantimeter (Weatherwax(1)) placed between the tube-target and the patient which shows at all times during the treatment the quantity of x-radiation which is penetrating the filters and striking the patient.

This instrument is the greatest single factor yet devised for the protection of the patient as it has a specific and set reading for each variation in filter, voltage and milliamperage and thereby acts as a check against any error, such as leaving out filters or using too high voltage or milliamperage during the treatment. The least deviation from the desired setting registers immediately in plain view of the operator on the galvanometer which is mounted just above the control stand. It is no longer necessary to rely on the degree of radiation sickness exhibited by the patient to determine the amount of radiation received.

The radium added consists of twenty-two 1 mg. needles, seven 2 mg. needles. four 1 mg. cells and eight 5 mg. tubes all having platinum iridium filter which insures the minimum of local caustic effect while securing a highly destructive type of radiation in the tissues treated.

By the use of heavily filtered radium tubes within the internal cavities a large per cent of the dosage may be given in this manner and for the balance necessary to reach the desired tumor intensity or saturation point one may administer deep x-ray and repeat with additional deep x-ray treatments two or three times each week as required to maintain the degree of saturation in the diseased tissues, thereby insuring that all stages of development of the tumor cell has received the maximum amount of radiation without overdosing the adjacent normal tissues. Saturation charts are maintained on all patients as part of the routine record. The present day trend in radiation therapy is to obtain the desired degree of tumor saturation as early as possible and maintain it as long as is thought necessary depending on the type of malignancy, location of the tumor, condition of the patient, etc.

Realizing that the question of malignancy today is extremely broad and that no single individual is capable of handling all phases of the problem, a tumor clinic was organized late in 1931 at St. Joseph's Hospital. This clinic acts in an advisory capacity in all tumor cases coming to the hospital in which its advice is sought.

This tumor clinic consists of Dr. B. M. Riley of the medical service, Dr. George F. Simanek of the surgical service, Dr. B. Carl Russum of the pathological service and Dr. James F. Kelly of the radiological service; and all cases are examined by them or someone designated by them from their respective services using as additional consultants those specialties indicated in the particular case. In this way every member of the staff of St. Joseph's Hospital is a member of the tumor clinic and all tumor cases receive consideration from the four major specialties and whatever other specialty is indicated. All physicians and medical students are welcome guests to the clinic hour held every Friday morning in the x-ray department between 11 and 12 o'clock during which time cases are presented and a general discussion takes place. The physicians of the staff or visitors presenting cases are in no way bound to follow the advice or suggestions given by the tumor clinic group and the patient may be present while the discussion takes place or may be left in one of the dressing rooms adjoining the x-ray department. No charge is made for any consultants services and any regular practitioner is invited to present his case during this clinic hour. If the case desires hospitalization and treatment only the usual fee for the services involved is made.

1932 RADIATION THERAPY CASES CHART NO. 1

Part	No. Cases	Malignant	Benign	Good Prog.	Bad Prog.	Early Met.	Late Met.	Biopsy	Surg.	X-Ray	Rad'm	Alive	Dead	Well	Good	Fair	Poor
Oral Cavity	16	16	0	4	12	5	0	1	8	16	7	10	6	3	3	1	3
Esophagus	3	3	0	0	3	0	0	1	1	3	0	0	3	0	0	0	0
Stomach	2	2	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0
Colon	2	2	0	0	2	1	0	1	1	2	0	1	1	0	1	0	0
Larynx	1	1	0	0	1	0	0	0	1	1	1	0	1	0	0	0	0
Bronchi-Lungs	6	4	2	2	4	0	0	0	0	6	0	3	3	0	3	0	0
Cervix	18	18	0	1	17	1	0	16	9	18	12	10	8	0	4	3	3
Ovary	5	5	0	0	5	4	0	1	4	5	0	2	3	0	2	0	0
Menorrhagias	5	0	5	5	0	0	0	0	0	5	0	5	0	?	5	0	0
Breast	12	11	1	4	8	6	2	1	8	12	1	11	1	0	1	9	1
Testicle	2	2	0	0	2	0	1	0	2	2	0	1	1	0	1	0	0
Penis	4	2	2	2	2	0	0	2	1	4	3	4	0	1	1	1	1
Bladder	3	3	0	0	3	0	0	1	2	3	1	1	2	0	1	0	0
Kidney	1	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1
Bone	4	2	2	1	3	0	1	2	2	4	0	4	0	1	2	0	1
Neurogenic	2	2	0	0	2	0	0	1	1	2	0	2	0	0	0	0	2
Endocrine Glands	8	1	7	4	4	1	0	0	1	7	1	7	1	4	2	1	0
Eye	1	0	1	0	1	0	0	1	1	1	0	1	0	0	0	0	1
Infections	4	0	4	1	3	0	0	0	1	4	0	3	1	1	1	1	0
Adenopathies	16	11	5	6	10	4	0	6	0	16	0	10	6	0	10	0	0
Skin Blood Vessel	34	26	8	26	8	0	0	3	7	32	8	33	1	24	9	0	0
Total	149	112	37	56	93	22	4	37	50	146	34	109	40	34	46	16	13

During the year of 1932, one hundred and forty-nine cases were presented for discussion in the tumor clinic and the figures in Chart 1 should serve to bring out the fact that inaccessible. far advanced malignancy is still incurable in the majority of cases but the proper co-operation of surgeon, pathologist, internist and radiologist will undoubtedly add a variable length of time to the life of those suffering with lesions of this character, the principal ones being cancer of (1) cervix, (2) ovary, (3) breast, (4) oral cavity and (5) certain glandular tumors and the leukemias.

Of the one hundred and forty-nine cases ninety-three had a bad prognosis when first treated and forty were dead by the end of the year. Of the forty cases dead; four died of intercurrent infection, three died following surgery and four died before receiving twenty-five per cent of the saturation dose of x-radiation and, therefore, are not considered as a fair test of the merits of radiation therapy. This leaves twenty-nine cases which received sufficient radiation to warrant their consideration as a test of this form of treatment. Of the twenty-nine, fifteen had metastases when first presenting for treatment and fourteen were inaccessible or internal cancers (esophagus 2, stomach 1. bronchi and lungs 3, cervix with involvement of adjacent viscera, bladder, rectum, etc., 6, primary urinary bladder 2.). In this group of cases little or nothing was to be offered by any form of treatment and their death even though radiation was used was only to be expected.

However, the chart shows that ninety-three patients had a bad prognosis when first presenting; this leaves fifty-three still living, twenty-eight of whom presented the most hopeless prognosis and we feel would have been dead with the other forty had not radiation been used in their treatment. In all of these cases no other form of treatment was recommended as all previous attempts at therapy had been unsuccessful. Some of these twenty-eight are in very good condition and we hope to add several years to the lives of the majority of them.

The remaining twenty-five in the bad prognosis group were not quite so hopeless and we do not feel that our work was of such outstanding value although we expect to add considerable time to their lives, even though eventually some of them will die from malignant disease.

Of the thirty-four cases of skin and blood vessel tumors, twenty-six were malignant and only one died, the latter a man ninety-one years old with an inoperable malignancy involving the cheek and orbit. (In the aged and anemic, lesions which are usually radiosensitive are often radio-resistant). Several others fell in the bad prognosis group including one cerebral hemangioma. Many of these cases were best treated with radiation although there were others that could have been treated successfully by other methods.

If, as we believe, we have done some good with our radiation therapy during the past year, particularly to those twenty-eight cases who were discarded by the other specialties and who responded so well to radiation therapy, let us next consider the question, have we done any harm? To arrive at any conclusions on this point we tabulated all the post radiation sequelae which we thought had any bearing on the patient's condition either local or general. (See Chart No. 2).

CHART NO. 2
RADIATION SEQUELAE

1—Bronzing 23.
2—Dryness of Skin 2.
3—Erythema 32.
4—Erythema with Scaling 1.
5—Epilation 18.
6—Necrosis 0.
7—Sloughing 0.
8—Cystitis 1.
9—Proctitis 1.
10—Enteritis 3.
11—Nausea 38.
12—Nausea and Vomiting 10.
13—Lassitude 20.
14—Laryngeal Edema 1.
15—Cough 0.
16—Chest Pain 0.
17—Pleurisy 0.
18—Effusion 0.
19—No Reaction 105.
20—Medical Legal Complication 0.

An analysis of this chart shows practically a complete absence of any serious or lasting complication following radiation. In no instance was there any tissue destruction or sloughing present and in only ten cases (7%) of the entire group was there nausea or vomiting. There was no reaction of any kind local or general in one hundred and five cases (70%).

As a result of having definitely benefited twenty-eight cases (18%) none of whom could be offered much by other forms of treatment, as well as being of definite benefit to many other cases and as we feel that we added nothing in the way of additional disease or distress to any of the patients we treated it seems that radiation should be given earlier and more opportunities to be of benefit to those suffering with malignant disease.

In the selection of any form of treatment the mortality incident to its use certainly should receive consideration and we feel that no case in this series died or developed any complications which hastened their death. This result is due to several advances in general use in this type of work. Every case is now thoroughly studied and classified before treatment is started. Treatment today is along much broader lines than in years past when it consisted merely of the administration, in as short a time as possible, of the fixed and rigid amount of radiation given to practically all cases without regard to numerous important technical and clinical factors. Keeping Grotthus law in mind that the biological change taking place in the cell is dependent upon the amount of radiation absorbed by the cell, differences in filters, voltage and other factors render a more flexible treatment essential. The present day laboratory aids(2) include routinely a grading of the tumor which is based on the architectural structure of the neoplastic tissue plus the serum reaction of the individual. Blood sugar estimations and the use of the acid forming diet are also routine procedures on hospital cases. The general condition of the patient and the associated diseases and complications are all given special consideration before or during the time the treatment of their malignancy is in progress. A special attempt is made to prevent and combat radiation sickness with medication based on the study of the patient's general condition.

However, in the internal, inaccessible malignancies such as carcinoma of the esophagus, stomach and those in which the metastases or invasion of adjacent viscera was extensive, mortality was to a great extent uninfluenced (twelve still live with metastases or involvement of the adjacent tissues). Practically all of the cases dying during the first year fell in this class. Those who survived in this group are the exception and not the rule as the majority of them have at the best only a short time to live. This serves to emphasize the fact that malignancies should be given radiation therapy before they are in the hopeless group.

This is the only fair thing to do in the interest of the patient without any regard to the radiologist. The fact that these patients will eventually die does not justify the selection of just any old method and radiation therapy is the method of choice when the lesion may not be removed in its entirety by surgical means. Any time added to ones life, especially if the patient lives in comfort, is certainly worth while. In this connection attention is drawn to the fact that no additional disease or distress of any consequence was added to the burden of the patient who was already sick with a malignant disease. In former years it was customary to radiate in such a way that frequently the patient was worse after than before. This result is no longer witnessed and if no good is accomplished at least no harm is added.

In twenty-two cases there were metastases present when they appeared for treatment and in only four cases of the remaining ninety did metastases become apparent after treatment was started. This is in harmony with the recently proven fact that "radiation of any type does not tend to spread a cancer or to cause metastases."(3). The earlier the inoperable malignant case is given to the radiologist the better the result that can be expected.

SUMMARY

1. The use of radiation therapy is rapidly becoming of more value in a greater number of diseases than the profession at large seems to appreciate. This is due mainly to a better understanding of diagnosis, preparation of the patient as well as more accurate methods of estimating, controlling and observing the amount of radiation administered.

2. Though there is still no accepted curative procedure for inaccessible malignancy there are some procedures which are looked upon favorably as aids in the management of malignant disease and among these radiation therapy is universally recognized and employed.

3. In the present series one hundred and forty-nine cases are considered. Forty are dead, one hundred and nine are living. Ninety-three had a bad prognosis when presenting for treatment, fifty-three of these are still living, twenty-eight of whom were considered beyond the therapeutic range of the other specialties but they are still living and improved subsequent to radiation therapy which we feel is to a great extent accountable for their improvement. However, twelve of these have demonstrable metastases or extensive invasion of adjoining viscera and we feel they will undoubtedly die from malignant disease. Though many of the hopeless cases are still living and improved it is felt possibly many of their companions in this group who died might have been materially helped if they had been referred earlier during the course of their disease for radiation therapy. Pre-operative and post-operative radiation should be employed much more commonly than is the present practice. In conclusion many were helped and no one was harmed in this group of 149 cases.

4. The proper procedure to follow in handling the malignant case requires more technical and specific knowledge than is possessed today by any one individual and for this reason such a routine as is afforded by a tumor clinic seems essential for their intelligent management.

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EFFECT OF DIGITALIS ON ARRHYTHMIAS OTHER THAN FLUTTER AND FIBRILLATION OF AURICLES

Charles W. Barrier, Fort Worth, Texas (*Journal A. M. A.*, Sept. 3, 1932), reports that in two cases of supraventricular tachycardia, digitalis was given by vein and was followed by slowing of the rate of the paroxysm and the restoration of sinus rhythm. In one case the effect was supposed to be due to direct action of digitalis on the heart muscle. In the other case the effect was thought to be due to increased vagal tone as the heart under digitalis behaved as when the vagus was mechanically stimulated and because digitalis failed to abolish the paroxysm after the vagus was paralyzed by atropine. In extrasystolic arrhythmia the use of digitalis is occasionally of benefit in relieving both the disturbing rhythm and the symptoms of heart failure. It will abolish extrasystoles more frequently than the literature would indicate. Cases are reported in which all three types of extrasystoles were abolished. The authors believes that digitalis is probably effective through its action on certain factors involved in circus movement.

SURGICAL INDICATIONS IN GOITER*

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So many terms have been used in the medical literature dealing with abnormalities of the thyroid gland that before discussing the subject, I wish to submit the classification which I use in order that my nomenclature may not be confusing.

GOITERS

1. Colloid (Endemic goiter due to iodine deficiency)
    a. Diffuse Colloid Goiter.
    b. Nodular Colloid Goiter.
2. Exophthalmic Goiter.
3. Adenoma of the Thyroid.
4. Thyroiditis.
5. Malignant Tumors.

Before considering the question of surgery in any given case of goiter, it is desirable to make a clinical diagnosis and in addition determine the degree or absence of hyperthyroidism. In the cases of nodular colloid goiter or adenoma of the thyroid hyperthyroidism may be present. Colloid goiter is not associated with hyperthyroidism and exophthalmic goiter always shows an increased basal metabolic rate.

Surgical attack on the thyroid gland may be made for six reasons:

1. To relieve hyperthyroidism by removal of thyroid tissue.
2. To relieve the mechanical effects of swellings of the gland.
3. To remove unsightly goiters for cosmetic purposes.
4. To remove pre-cancerous or early malignant growths.
5. To prevent hyperthyroidism by removal of adenomata or nodular colloid goiters.
6. Rarely to establish a diagnosis.

The first three reasons are old and established. The last three may perhaps be looked upon as advanced and subject to some controversy, but I believe can be justified by facts.

Let us consider how these reasons for surgical attack apply to the various goiters.

Diffuse Colloid Goiter: This type of goiter is not associated with hyperthyroidism, it does not cause pressure, it is not as a rule unsightly, it is not prone to become cancerous, the diagnosis is not difficult, and above all it is usually amenable to iodine or thyroid feeding. Therefore, surgical treatment is ordinarily not indicated. These statements apply particularly in this geographic location, but in the true goiter belts this goiter may apparently become large and unsightly, and fail to regress under medical treatment sufficiently to give a satisfactory cosmetic result. In our vicinity the diffuse colloid goiter typically progresses to a nodular colloid goiter before attaining great size.

Nodular Colloid Goiter: When a colloid goiter has undergone the degenerative changes which produce the nodules it is no longer possible to make it disappear by thyroid feeding. This goiter may be associated with hyperthyroidism. It sometimes causes tracheal pressure symptoms by erosion of the cartilages, deviation of the trachea or by descending behind the sternum. It is often unsightly. It does not tend to become malignant. Surgical attack is indicated when any one or a combination of these reasons exist. The results of surgery in this goiter are eminently satisfactory.

Exopththalmic Goiter: Surgical therapy is indicated in exophthalmic goiter. Here hyperthyroidism always exists and is the only reason for surgical attack. Done in one or more stages the goal is subtotal thyroidectomy. Whether the benefit comes from eliminating a large part of a primarily hyperfunctioning gland as most of us assume or whether it comes as Marine thinks because "a carefully timed removal of the optimum amount of thyroid tissue gives the patient acute physiological rest which can be brought about in no other way." or for other reasons we cannot be certain. Typically surgical treatment is followed by a disappearance of the hyperthyroidism as measured by the basal metabolic rate and a subsidence of the other symptoms to almost a normal state. Where cardiac damage is manifest the heart regains normal function after some time. The exophthalmus improves and the patient is rehabilitated. In about 80 per cent of the cases entirely satisfactory results are obtained. Of the remaining 20 per cent a few have recurrences which do not respond to iodine and require secondary operation. The remainder continue to have that nervous instability which is so characteristic of the disease, but with a normal basal metabolic rate they do not show the marked exophthalmus and cardiac damage of the untreated cases.

Adenoma of the Thyroid: This goiter may be associated with hyperthyroidism, the so-called toxic adenoma. When this condition exists surgical removal of the adenoma is always indicated, for the operation is attended by an extremely low mortality and gives exceedingly satisfactory results. Early removal prevents hyperthyroidism. Adenoma is the most common type of substernal or intrathoracic goiter, giving rise to mechanical obstruction of the trachea. When such a condition exists surgery offers the only relief. I consider surgical removal positively indicated if a low lying adenoma shows a tendency to descend into the thorax, as can be determined on digital examination or by the history of alternating appearance and disappearance of the goiter. An adenoma may justifiably be removed for cosmetic effects.

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*Read before the Omaha-Douglas County Medical Society, October 25, 1932.

Adenomata tend to become malignant. While they compromise about twelve per cent of goiters 90 per cent of thyroid malignancy arises in them and 7 per cent of adenomata are malignant, when they come to operation. In the earlier stages malignancy cannot be accurately diagnosed except by histological examination and removal leads to a high percentage of cure (about 95%). In cases where malignancy is suspected clinically because of hardness and fixation of the adenoma the mortality after removal immediately mounts to about 25 per cent. These are the figures from the Lahey Clinic where most attention has been paid to this phase of the goiter problem. It is obvious from these figures that early removal of adenomata will prevent deaths from cancer.

Thyroiditis: Thyroiditis is not an indication for operation unless abscess forms. Occasionally this condition will cause the thyroid to become so hard and brawny that malignancy cannot be differentiated except by histological section and in such cases biopsy is indicated for diagnosis.

Malignancy: As I have stated the malignant adenoma of the thyroid is often amenable to surgical treatment when seen early, but another type of thyroid malignancy occurs which develops more suddenly, metastasizes early and produces a fatal termination within a few months. Operation, no matter how radical, is rarely of any benefit in these cases.

SUMMARY

Surgical treatment is indicated:

1. In nodular colloid goiter when hyperthyroidism exists, when there are pressure symptoms, and when the tumor is unsightly.

2. In all cases of exophthalmic goiter.

3. In all adenoma which have attained any considerable size or are increasing in size, which are associated with hyperthyroidism, or which are or tend to become substernal. Suspicion of malignancy should not be awaited.

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TORSION OF HYDROSALPINX

REPORT OF TWO CASES

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It is generally considered that hydrosalpinx is a direct sequel to a salpingitis or a perisalpingitis, with Neisserian infection as the cause of the original inflammatory involvement. Mathieu(1) described two types of hydrosalpinx: the one in which both ends of the tube are closed, and the other in which the distal end only is closed. He believed that all cases of large hydrosalpinx are of the first type, and are much less frequent than those of the second type. He further stated that when the tube is closed at both ends the closure at the cornual end is an active occlusion or a closure caused by kinking.

Eastman(2) in August, 1927, made an estimate from his study of the literature that previous to that time there had been ninety-one reported cases of torsion of a hydrosalpinx. Since that time Miles(3) in July 1927, Torland(4), Chabrut(5), Börner(6), and Bonnet and Bozon(7) have reported cases. Eastman(2) stated that torsion of the hydrosalpinx occurs more frequently on the right side; however, there is no known explanation for this fact. Our first case to report occurred on the left side.

Case 1—Mrs. L. Z., age 45 years, was first seen late in the evening of February 24, 1932. She complained of a severe abdominal pain of a cramp-like character in the left lower quadrant; the pain at times being extremely severe. She stated that on the morning of the previous day she first noticed a dragging sensation on the left side which became spasmodic as the day went on, and became more pronounced with movements of the left leg. According to her past history, she had had frequent attacks of nausea, vomiting, and distress in the upper right quadrant together with indigestion and gas following rich and fatty foods. She gave no history of infection of the genito-urinary tract with the exception of occasional attacks of frequent urination. Her menses began at fourteen and were regular every twenty-eight days until eight years ago when she began having dysmenorrhea and metrorrhagia alternating with periods of amenorrhea. At this time she had a uterine dilation and curettage followed by a constant metrorrhagia lasting eighteen months. She was then irregular with two or three months elapsing between periods, and for the last nine months she has had a complete amenorrhea. During these last few months she has had backache and bearing down pains at the time of her regular periods. She had been married twice, living with her first husband eighteen years and with her present husband one year. During the first marriage she had three miscarriages, none of them induced, and carried one pregnancy to seven months when she was delivered of a still born infant. Her family history was negative and she had had no previous attacks similar to this.

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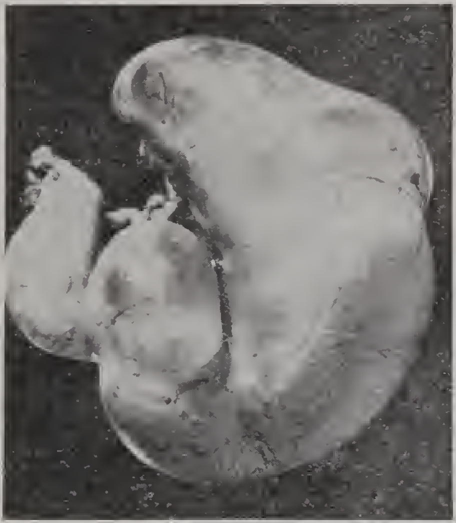

Fig. I, Case I. Showing torsion at site of ligature.

On examination her temperature was 100° F., pulse 88, respiration 20. The physical findings were negative except for tenderness over the left lower quadrant, with marked exacerbation of the pain on extension of the left leg. Vaginal examination was rather difficult as the slightest pressure on the left side brought on severe pain. However, a doubtful mass was palpated on the left side. She was admitted to the Lutheran Hospital. The laboratory findings were: hemoglobin 100%; red blood cells 5,100,000; white blood cells 8,100; polymorphonuclears 61%, lymphocytes 39%. The urine was negative except for a faint trace of albumin. The blood Wassermann was negative. A diagnosis of probable ovarian cyst twisted on its pedicle was made and the patient operated upon by Dr. Brown. The following findings are taken from the hospital record.

Pathology—The left Fallopian tube is enlarged to a cystic mass about five inches long and two and a half inches in diameter and is twisted two and a half turns in a clock-wise direction, the point of the twist being situated about three-fourths of an inch from the entrance of the tube into the uterus and above the ovary, involving the left broad ligament. The ovary beneath the twist is quite congested, as are the vessels of the broad ligament. The ovary also contains a cyst which holds about one and one-half drams of a clear serous fluid. The appendix is long and shows evidence of previous inflammation in the way of adhesions running from the cecum to the surrounding peritoneal surface of the appendix near its base. The gallbladder is soft and several stones can be felt in it, but there are no adhesions around the gallbladder.

Procedure—Left paramedian suprapubic incision. The tube was untwisted and the pedicle clamped below the point of twist and transfixed with No. 0 chromic catgut and ligated. (The base of the cyst was ligated in order to keep the fluid in it.) The pedicle was divided and the cyst removed. The appendix was removed in the usual manner by ligation of the mesentery at the base of the appendix, cauterization of the stump and covering the stump with the stump of the mesentery. Abdominal wound closed in the usual manner without drainage. Condition good. Medication on the table, 150 mgms. neocain and 3 cc. of 1% novocain. Specimens: tube and appendix. Drains, none. Dressings, vaseline, gauze. Three silkworm gut tension sutures and dermal sutures for the skin.

Case 2—Mrs. M. E., age 40 years, was admitted to the University hospital, November 7, 1932, complaining of pain in the lower right abdominal quadrant. On the morning of November second, while at work, she suddenly felt weak, nauseated, and finally vomited. This continued throughout the day and in the evening she suffered some pain in the lumbar region which migrated to the lower right quadrant of the abdomen. The pain gradually diminished until November sixth. On the sixth she had a severe attack of the pain but this time it was not preceded or accompanied by nausea or vomiting. At this time she went to bed and the following morning came to the hospital where she was referred to the surgical service.

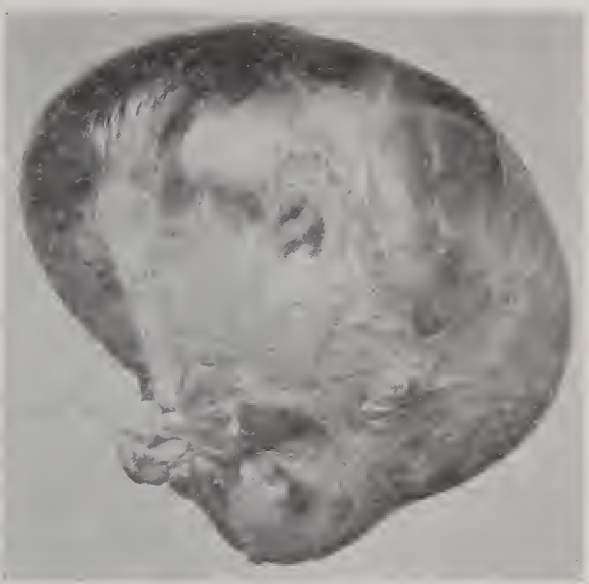

Fig. II, Case II. Posterior view showing remnants of adhesion which had formed subsequent to the twist.

The patient had previously been in good health. She had had the usual childhood diseases, also one attack of malaria, and influenza followed with pleurisy in 1918. Her gastro-intestinal and genito-urinary histories were negative. Her menstrual periods began at thirteen, had always been regular, free from pain, lasting three to four days. Her last period had been October 30, 1932.

The general physical examination on admission was negative except for the local abdominal signs. The temperature and pulse were not elevated and the blood count including differential count of the white blood cells was normal. She was not operated on at once. The acute tenderness and rigidity of the abdominal wall subsided in the course of twenty-four hours at which time a mass could be felt in the median line above the symphysis pubis and extending about three inches above it. The margins of the mass could not be determined exactly. Vaginal examination showed no masses in either lateral fornix but situated between the bladder and the body of the uterus there seemed to be a cystic mass which was tender but which could not be felt very plainly because all of the internal genitals appeared to lie very high up. A provisional diagnosis of ovarian cyst with a twisted pedicle was made because of the sudden onset, pain in the right side of the back, presence of the cystic mass, and absence of any signs of acute infection of the peritoneum. She was operated upon by one of us (Brown) with the following notations:

Operation—University hospital, November 11, 1932. Excision of right hydrosalpinx and appendix. Spinal anaesthetic. 150 mgms. of neocain.

Pathology—The outer half of the right Fallopian tube has become a cystic mass about five inches in length and three and one-half inches in diameter which has twisted upon itself in a counter clock-wise direction, one and one-half turns. The fimbriated extremity is, of course, closed. There is some injection of the parietal peritoneum and there are numerous friable adhesions between the cystic mass and the surrounding omentum. The twist occurs just distal to the outer pole of the right ovary and the mass has been thrown inward and lies between the bladder in front and the body of the uterus behind, with the distal end of the tube pointing left. The appendix is long, non-adherent, and apparently not pathological. There is very little free fluid in the peritoneal cavity. The cystic mass itself is dark red in color, evidently because of hemorrhage into it because of the twist, and shows dilated veins leading to the point where the veins have been caught in the twist. The surface is covered with the remains of the plastic exudate forming the thin adhesions.

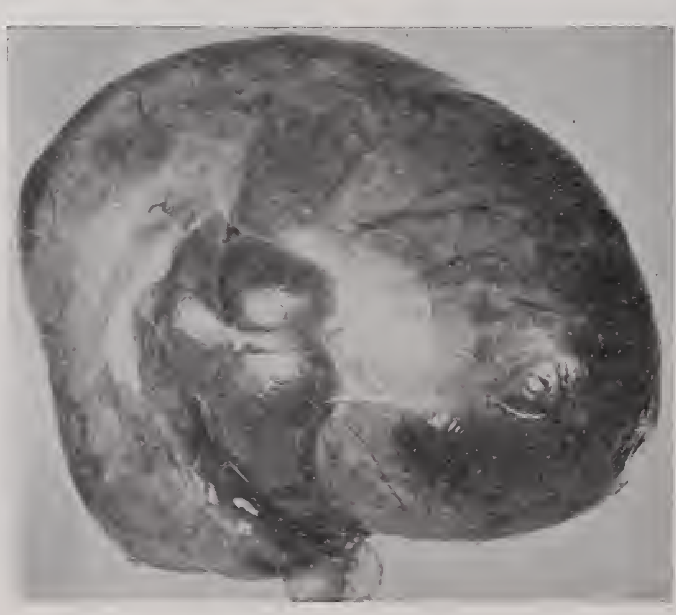

Fig. III, Case II. Anterior view showing enormously dilated veins, torsion occurred just distal to the point of the ligature.

Procedure—A right paramedian supropubic incision, from symphysis to umbilicus was made. The mass was shelled out from the surrounding omentum and delivered from the abdominal cavity. Pedicle was untwisted, clamped proximal to the point of twist with two clamps and divided between the clamps. The stump of the tube and broad ligament transfixed and ligated with chromic catgut and the larger vessels ligated separately. Appendix removed in the usual manner, abdominal wound closed in layers without drainage, using three silkworm gut tension sutures and dermal sutures for the skin. Condition, good. Medication on the table, 3 cc. novocain subcutaneously, 150 mgms. neocain intra-spinally. Specimens, hydrosalpinx and appendix. Drains, none. Vaseline gauze dressing.

It is our opinion that if, as stated by Mathieu(1), a certain number of cases of hydrosalpinx when closed at both ends are caused by kinkings, torsion of a hydrosalpinx should be encountered rather frequently as a clinical entity.

In order that a torsion should occur, it is necessary that there be no peritoneal adhesions or adhesions to a cystic ovary. and the mesosalpinx must be of sufficient length to allow the twisting. Then, as with torsion of a pedicle of a cystic ovary, as stated by Bland(8), the inciting factors may be violent intestinal peristalsis; external violence as from a blow, a jar, or a fall: or unequal growth in different parts of the hydrosalpinx.

It is interesting to note that in the left sided case the twist was in a clock-wise direction, while in the right sided case it was in a counter clock-wise direction. In both these cases, at least, when the tube grew so large that it projected beyond the axis formed by the infundibulopelvic ligament and the ovary, the intra-abdominal pressure forced it downward and inward along the brim of the true pelvis and so initiated the twist toward the median line.

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SUB-DIAPHRAGMATIC ABSCESS

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J. S., aged 30, laborer, was seen September 6, 1911, complaining of pain in the abdomen.

Past history: For several years the patient has had periodic attacks of abdominal cramps associating with diarrhea. These attacks would last for several days to a week. Between attacks he felt very well.

Present illness: For the past two weeks he has suffered from diarrhea and abdominal cramps. On September 6, 1911, at 6:30 p. m., he was seized with an intense agonizing pain in the upper abdomen. Was seen at 7 p. m. at which time he was sitting on the floor with both knees drawn up to his thorax and moaning with pain. Very nauseated. Could not straighten legs or lie down. Abdomen rigid and exquisitely tender. Temperature normal. Between 7 and 10 p. m. he received by hypodermic ¾ gr. morphine and 3/100 gr. atropine and by mouth ½ gr. codeine. Very little relief until midnight.

The following morning he was somewhat easier. Temperature 101° and pulse 108. The abdomen was rigid and tenderness marked especially in the left epigastrium and gallbladder regions. Under local applications the tenderness and rigidity gradually subsided with retention of tenderness in left epigastrium and gallbladder regions. The liver became enlarged and tender. The left epigastric tenderness extended down ward in to the left flank and kidney region, the right sided tenderness gradually decreasing.

The patient was taken to the hospital and under expectant treatment improved rapidly with temperature receding to 99°. One week later was removed to his home and temperature rose to 103 the same afternoon. He gradually grew worse with mounting temperature and the development of dullness over the left lower thorax. There was no cough but marked pain on deep inspiration. The pain radiated up the left thorax to precardium, left sub-clavicular region and left shoulder. Complained of dyspnoea and had several sinking spells. Digestion was good. Bowels moved without pain and urine was negative.

September 17, 1911 the patient was anesthetized and exploration made with operating needle. Pus was found in the 8th and 9th interspaces, anterior axillary line. A section of the 9th rib was removed and upon opening the thorax the diaphragm was disclosed bulging nearly to the ribs. There was a slight amount of clear exudate in the lower thorax. The needle was again used to locate the abscess cavity which was opened with the escape of approximately one pint of brownish fluid, with a very foul odor. Digital examination revealed a small cavity extending back and to the left. Cigarette drain was inserted and skin closed. Wound drained for several weeks and finally closd.

Ten months later, July, 1912, the patient had an attack of chills, fever and sweating with very little cough. Pain over the anterior left thorax and gallbladder region. The gallbladder was palpable. Several days later after a severe coughing attack the scar ruptured with the escape of a thick yellowish white pus. Temperature returned to normal in a few days and patient recovered with a sinus which was finally closed by bismuth injections.

COMMENT

There are several facts in the history of this case which lead to rather definite conclusions. First the history of previous cramps and diarrhea which would suggest a single abscess of the liver. Associated with this is the enlargement of the liver during the acute stage of the disease. Next the absence of jaundice. In multiple abscesses of the liver there is usually jaundice, very little enlargement of the liver and a more acute course frequently following a definite infectious process elsewhere in the body.

The two most common causes of single abscess of the liver are amoebic disease which is common in the tropics and hydatid disease usually diagnosed by the presence of the daughter cysts and hooklets in the pus. The contained fluid is clear and the condition is not common in this country. In consideration of these facts and the absence of complete laboratory data, we must make a tentative diagnosis of sub-diaphragmatic abscess secondary to a single abscess of the liver probably of amoebic origin.

SEVEN EVILS OF MODERN TIMES

Industry without humanity
Science without morality
Politics without principle
Wealth without work
Worship without sacrifice
Knowledge without character
Pleasure without conscience.

—Selected.

Towers—"Why didn't you invite Dr. Highfee to your party."

Spires—"I was afraid he might forget and charge for his visit."

CHRONIC INVERSION OF THE UTERUS*

REPORT OF A CASE

MAURICE E. GRIER, M. D.,
Omaha, Nebr.
(From the Departments of Obstetrics and Gynecology, John A. Creighton Medical College).

Mrs. M. M., age 22, primipara, was admitted at 6:50 a. m., March 13, 1931, to Dr. Muldoon's service at St. Joseph's Hospital. Prior history was negative. Her pregnancy had been normal so far and labor, at term, was well established on admission. Progress was rapid and at 7:45 a. m. she was delivered of a full term fetus by the interne on that service. Pituitrin was given after the termination of the second stage and moderate fundal massage was performed. At 7:58, thirteen minutes later, inversion of the uterus occurred, with the placenta still attached, the entire mass lying outside the vulvar orifice. The patient immediately experienced profound shock. Immediate manual replacement was performed and the placenta was then expelled spontaneously with profuse hemorrhage. A uterine pack was introduced and the patient returned to bed. Measures were instituted to combat the shock and two hours later much improvement had occurred. The uterine packing was removed 24 hours later. The first post-partum day laboratory findings were as follows: Urine acid, specific gravity 1030, albumin 4 plus, and microscopically contained a few epithelial and a few pus cells. Blood examination revealed R.B.C. 2,370,000, Hemoglobin 50%, W.B.C. 23,200 and polymorphonuclear neutrophiles .82%. Pulse and temperature were moderately raised at irregular intervals but convalescence was otherwise uneventful. She was discharged on her eleventh past partum day and instructed to report to the dispensary for subsequent observation. Pelvic examination on discharge was not recorded.

Six weeks later she reported to the dispensary with the history of persistent bloody vaginal discharge since leaving the hospital. She was referred to the Gynecological Department where she came under the care of the author. Examination revealed a complete inversion of the corpus uteri, presenting itself as a pear-shaped, pinkish, oozing mass with the cervix forming a tight construction around the inverted lower uterine segment. She re-entered St. Joseph's Hospital on May 3, 1931. General physical examination was negative except for pallor and pelvic findings as noted. The urine was negative chemically and microscopically. Hemoglobin was 32%, the erythrocytes numbered 2,580,000 and the leucocytes 7,350.

May 6, 1931, the uterus was replaced by the Spinelli operation, a small rubber wick being placed in the utero-vesical space. The second day the patient developed fever up to 104 and the pulse increased to 124, due we believed to involvement of the pelvic cellular tissue. The temperature rapidly subsided, returning to normal on the fourth day and remained so during her convalescence. She was discharged on the thirteenth post operative day, at which time her general condition was good. Pelvic examination disclosed the uterus in body axis but not clearly outlinable due to infiltration of the parametrial tissues. The vaginal vault and the cervix were healing normally.

Six months later the uterus was normal in size, position and mobility. The cervix was well healed. The patient has not reported since then.

Inversion of the uterus is fortunately a rare obstetrical complication averaging once in 125,000 labors (Phaneuf(1)). Recently several cases have been reported by Findley(2), Gill(3), Huntington(4), and others. It usually appears during or following the third stage of labor but may appear on the second, sixth, or even the fifteenth day after delivery (De Lee(5)).

In considering the etiology traction on the cord and too vigorous Crede must be included as possible causes. All authors agree, however, that these are not the sole factors even when employed. De Lee(5) is of the opinion that spontaneous inversion may result from the contraction of a part of the uterus before firm retraction has taken place. Jones (quoted by Phaneuf(1)) describes the mechanism thus: After any portion of the uterus becomes indented to a considerable extent the rest of the organ seizes this invaginated portion as it would a foreign body and in attempting to expell it turns itself inside out." Forceful Crede or traction on the cord in a greatly relaxed uterus could easily produce the required indentation. Other factors favoring the invagination are sudden contraction of the abdominal muscles, coughing, sitting up, etc.

The symptoms consist of profound shock accompanied by profuse hemorrhage in those cases where there has been partial or complete separation of the placenta. Hemorrhage may be absent if the placenta is still attached. The shock experienced is out of all proportion to the blood loss. The cervix may quickly contract around the protruding mass, controlling the hemorrhage but increasing the difficulty of manual replacement. The inverted fundus protrudes from the vaginal orifice or may be felt within the vaginal canal. Sudden hemorrhage with severe shock calls for investigation of vaginal vault. The diagnosis should be made without difficulty.

Treatment consists in reposition or hysterectomy. No manipulation is permissable while the patient is in deep shock lest the added burden end disastrously. Packing the vagina tightly, compression of the aorta and other measures should be employed to control hemorrhage while instituting therapy to combat the shock. Kellogg(6) classified the condition for treatment purposes as acute, subacute, and chronic inversion. In the first he places those discovered before cervical ring contraction and advocating immediate replacement from below, the patient's condition permitting.

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*Read before the meeting of the Omaha-Douglas County Medical Society, Jan. 24, 1933.

In his subacute group fall those early cases in which a firm cervical ring has formed and for these he advises abdominal replacement by the Huntington technic after blood transfusion.

The chronic group comprised those which have existed for several days or weeks and for these he suggests the Spinelli type of operation. To the last suggestion I believe should be added hysterectomy for those cases showing infected or necrotic endometrium. Replacement of such tissue will result in a high incidence of infection. It is advisable when doing hysterectomy to split the anterior uterine wall to the fundus and thus avoid possible injury to intestine that may be drawn into the cupped fundus.

The question of subsequent pregnancies was investigated by Miller[7] who studied 56 cases collected from the literature. Some of his interesting conclusions were as follows: (1) Recurrence of the inversion in subsequent pregnancies is apt to occur in women of greater parity; (2) The Spinelli type of operation gave the best results in the operative group; (3) Recurrence in subsequent pregnancies is seen more often in cases reduced manually than in the operative group; (4) Adherent placenta occurs frequently; (5) The danger of ruptured uterus in those corrected by operation is greatly exaggerated.

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INCIDENCE OF CARCINOMA IN CERTAIN CHRONIC ULCERATING LESIONS OF THE STOMACH

From a study of the literature and of their own cases, George W. Holmes and Aubrey O. Hampton, Boston (*Journal A. M. A.*, Sept. 10, 1932), believe that it is fair to state that any chronic, indurated, ulcerating lesion occurring in the pyloric antrum within 1 inch of the pylorus, but without involving the pylorus, should be considered malignant until proved to be otherwise, and that proof of the absence of malignancy in such lesions is obtained only by serial section and careful microscopic examination. It is not safe to interpret such lesions as benign from roentgen examination alone or from observation on the operating table. Given a case presenting such a lesion in the prepyloric area, it is probably safer and wiser to treat the lesion by wide surgical removal than by medical or palliative treatment. The same is true of all chronic, indurated, ulcerating lesions occurring on the greater curvature and probably with most lesions occurring in the cardiac end of the stomach. The benign, chronic, indurated, peptic ulcer occurs on the lesser curvature above the antrum or in the region of the pyloric valve. Accurate localization of these lesions is of the greatest importance, but is sometimes difficult; foreshortening of the stadow of the stomach on the x-ray film may make the niche of the ulcer appear closer to the pyloric opening than it actually is. Careful fluoroscopic observation or films taken at various angles should obviate this error. Large ulcers occurring low on the lesser curvature may extend into the region of the antrum; similar ulcers arising in the region of the pyloric valve may extend into the stomach. They should not be classified as pre-pyloric ulcers. In their presentation the authors purposely avoided a discussion of the various roentgen studies which help to differentiate benign from malignant ulcerations, other than position. They are all important, and all facts, including those obtained from the history and physical examination, should be considered in the final diagnosis.

AFTER-CARE OF THE INJURED

W. L. Estes, Jr., Bethlehem, Po. (*Journal A. M. A.*, Oct. 8, 1932), lays stress on the important and essential part the patient and his mental attitude play in the recovery from an injury, but does not overlook or minimize the need for prompt and skilful surgical procedure. Rather, his intention is to indicate what may be the weak links in the chain of treatment. It is pointed out that the patient himself must be taught to realize that the regaining of function is his job, and that it can be accomplished by persistent active use of the injured part, aided by physical therapy. Proper psychotherapy to avoid and prevent the neuroses of injury must be practiced, and early return to work is the best occupational therapy and does much, and, perhaps, most, to effect the complete and final restoration of function.

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LOOKING TOWARD THE ANNUAL MEETING

The *Journal* manuscript for any month is always at the printer's by the twentieth of the previous month. This is, in the case of the annual meeting this year, two months before the date for the meeting, and is, therefore, too early to give a comprehensive idea of what the program will have in store for you.

Suffice it to state that the program committee is in touch with some of the best talent in the country and you will not be disappointed in the people they will bring to you.

Reports from the secretary-treasurer so far are a bit disappointing. It is, however, reasonable to expect that members, while somewhat slow, will in the near future do their duty by the association.

An interesting side light on the membership situation is that so far this year there have been eighteen reinstatements—that is, former members who had not paid last year have paid this year—and in addition twenty-five new members have been received.

When annual meeting time arrives we fully expect that the usual number will "pack up your troubles in the old kit bag" and move onto Omaha and the meeting.

RESPECTIVE VALUES OF HEATED AND RAW MILK

A valuable summation of the results of the study of the much discussed problem of the respective food values of heated and raw milk is given in the *Journal A. M. A.*, Vol. 99, No. 18. The United States Public Health Service in cooperation with the state health departments of ten states undertook the study. An intensive survey was made in thirty-nine cities. Children that had received heated milk for more than half of their lives were put in one class and those who had raw milk for more than half of their lives in the other.

"A study of more than 3,700 children, from 10 months to 6 years of age, did not reveal any significant difference between the average weight of children who had received only heated milk, and the average weight of children who had received raw milk for more than the latter half of their lives. The average weight of the heated-milk group was 33.2 pounds (15 Kg.); the insignificant difference favored the children who had received only heated milk. There was no significant difference between the average height of children who had received only heated milk and the average height of children who had received raw milk for more than the latter half of their lives, the respective heights being 37.5 and 37.4 inches (95.2 and 94.9 cm.); the insignificant difference favored the children who had received only heated milk. The age-weight and age-weight and age-height curves were not significantly affected by the race distribution or financial status of the parents of the two groups of children.

"Supplementary foods were included in the dietary of practically all the children soon after weaning. The fact that American children do not live exclusively on milk except for the first few weeks of life renders it hazardous to draw any conclusions as regards infant nutrition from studies on rats that have been fed an exclusive milk diet. The supplementary foods fed to the two groups of children were essentially the same, except in the case of cod liver oil. The children receiving only heated milk were given cod liver oil during an average of 41.6 per cent of their lives, while the children receiving predominantly raw milk received cod liver oil during an average of 27.6 per cent of their lives. This interesting observation might be regarded as an explanation of the slightly greater weight of the heated-milk group. In order to investigate this possibility it was decided to regroup the children who had received heated milk on the basis of the cod liver oil intake. A comparison of the average weight of the children who had received cod liver oil for more than half their lives with the average weight of those who had received no cod liver oil at all revealed the negligible difference of 0.1 per cent.

"The incidence of diphtheria among 1,875 children who had received heated milk only was 17.1 per thousand, while the incidence of diphtheria among 1,762 children who had received predominantly raw milk was 22.7 per thousand. The incidence of scarlet fever in the heated-milk group was 23.0 per thousand, as compared with an incidence of 41.4 per thousand in the raw-milk group. Excluding diarrhea, which probably includes many mild cases not referable to milk, the incidence of intestinal disturbances in the heated-milk group was 111.0 per thousand, compared with an incidence of 196.0 per thousand in the raw-milk group. Scurvy occurred in only three instances, two in the heated-milk group and one in the raw-milk group. Rickets occurred in the case rate of 31.5 per thousand in the heated-milk group and 51.1 per thousand in the raw-milk group: this unexpected finding was thought to be related to the increased cod liver oil intake of the heated-milk group.

"This comprehensive survey indicates that the growth-promoting capacity of heated milk is not measurably less than the growth-promoting capacity of raw milk."

CHRONIC ARTHRITIS: NEW AND MODERN IDEAS

One of the most interesting books that I have had the pleasure of reading, on the subject of arthritis, is that entitled "Chronic Arthritis and Fibrositis" (Diagnosis and Treatment) by Bernard Langdon Wyatt, of Tucson, Arizona. One might call it an outline, or an introduction to arthritis, most inclusive but incomplete, intensely interesting to read, but unsatisfying with respect to well formulated deductions. Comprehensive without detail, it is a book of only two hundred pages, consisting of a splendid resume of many of the newer ideas with respect to our understanding of what chronic arthritis consists of, what causes it, and how to treat it. However, it over emphasizes certain phases of treatment to the painful exclusion of other methods that have proved, in the hands of well-grounded physicians, most effective in their arthritic clinics. Perhaps the most comprehensive section is that devoted to the classification and etiology of chronic arthritis and fibrositis. There is a clear-cut description of the role of the white fibrous tissue in chronic fibrositis; a differentiation between chronic infectious arthritis and chronic degenerative arthritis, and the association of the two in chronic "mixed" arthritis, as well as the changes that occur in the metabolic arthritides. The role of foci of infection, and the possibilities that their removal and treatment give to the arthritic, are well brought out. The recognition of the streptococcus, as a vital etiological factor, is established. The section devoted to treatment, which embraces nearly all of the general constitutional restorative, regenerative, and rehabilitative measures, is adequately dealt with. Numerous pages are given to the possibilities of physical therapy. It is one of the few works of this character which has satisfactorily correlated the prevention of deformity, and surgical possibilities of this disease. The single paragraph or so bearing on modern technique of vaccine therapy, which offers so much to the arthritic sufferers, is painfully insufficient and recklessly dogmatic. The dogma of Clausen and Wetherby is adopted *in toto* with the deduction that the giving of vaccine by intravenous injection offers the only method of desensitization, relief and cure of the chronic arthritic patient. Subcutaneous use of vaccine, by any method whatsoever, is woefully condemned as causing sensitization, and being ineffective. Strange as it may seem, many notably reputable doctors interested in arthritis, who follow the newer modern technique of administering vaccine therapy subcutaneously in sufficiently small doses, seldom sensitize their patients or have general constitutional reactions during the course of treatment, and report relatively similar ultimate results. In giving his results he truly states that chronic arthritis can no longer be ranked among the so-called incurable diseases. The results have not been the outcome of new discoveries, but rather the application of the principles laid down by Pope in his familiar lines:

"Be not the first by whom the new are tried
Nor yet the last to lay the old aside."

The book is delightfully readable, with much new thought. It will be an eye-opener to many, and will quicken the interest in arthritis, and lead to the cure of many sufferers.

—**J. E. M. Thompson, Lincoln.**

A chemist says the first alcohol ever distilled was Arabian; which may explain those nights.—Punch (London).

Confidence is the only prescription for the cure of hard times, declares a business doctor. Yes, and it must be about right for taking. It's been well shaken.—Boston Herald.

CANCER OF THE STOMACH

Deaths from cancer are increasing. There are now in the United States about 120,000 deaths from cancer each year, one-fourth to one-third of them being from cancer of the stomach.

In the fight against cancer. the most powerful of the captains of the men of death is cancer of the stomach.

Gastric cancer occurs more frequently in men than in women. Clinically it may be divided into two classes: (1) the kind of cancer that gives a history of indigestion, frequently resembling the history of peptic ulcer, for several years before the cancer becomes obvious; (2) the cancer of the stomach in which gastric symptoms appear only a few months before the disease is detected. The first type represents about 25 to 30 per cent of all gastric cancers. The second type comprises about 70 to 75 per cent of the gastric cancers.

Elsewhere in the body it seems to be true that cancer does not originate directly from normal healthy tissue. In regions that we can inspect, as the mouth, tongue, skin, rectum and lower sigmoid, cancer arises on a pre-existing benign lesion such as a patch of leukoplakia, a wart, a mole, an ulcer of a polyp-like growth. It is probable that cancer in the stomach follows this same general law. In the interior of the stomach, which cannot be satisfactorily inspected, benign growths or even ulcers may exist for years, especially if in the "silent areas" of the stomach, without creating symptoms until cancerous change and rapid growth have set it. The lesser curvature of the stomach, where gastric peristalsis begins, is the important motor region and about 80 per cent of all stomach complaints are due to interference with its peristalsis. A growth or lesion of any kind in the narrow pyloric end of the stomach may also cause symptoms because of partial obstruction. Roentgenologists say that any ulcer along the greater curvature of the stomach capable of demonstration by x-ray is practically always malignant, while many of the ulcers on the lesser curvature are benign.

It is generally recognized that some gastric cancers have their origin in benign peptic ulcers. The ratio of this incidence, however, is a subject of much dispute. It is true, too, that there is a low-grade cancer of the stomach which ulcerates early and cannot be distinguished grossly even at operation from a benign ulcer, microscopic examination being necessary to make a diagnosis. In the opinion of Holmes and Hampton, roentgenologists of the Massachusetts General Hospital, and of many gastroenterologists, the difficulty in differentiating between early cancer and peptic ulcer is so great as to call for surgical excision, the only known means of curing gastric cancer, unless the suspected lesion responds to medical treatment within a few weeks.

Because of the proximity of the liver and pancreas to the stomach and because, also, gastric cancers are usually not very radio-sensitive, efficient radiation treatment cannot be given gastric cancer, so the only means of cure is excision by partial gastrectomy. In some rare instances a total gastrectomy is justifiable.

If a patient reaches the "tropic of cancer," say 35 years of age, and begins to complain of vague symptoms of indigestion, such as belching, nausea, water-brash, heart-burn, sometimes vomiting, pain and discomfit in the upper abdomen, whether coming on at a regular time after meals or not, he should receive a careful examination by a competent general practitioner. In the majority of cases this stomach trouble will be found to be due to something other than a gastric lesion, and can be cured by appropriate medical measures. If, however, the patient is not relieved of his complaints after faithfully following the advised treatment for two or three weeks, his stomach and intestines should be examined with x-rays by someone fully competent to do this.

If cancer is found, an operation should be done as soon as possible by a surgeon of experience in gastric surgery. If the lesion appears to be a peptic ulcer, medical treatment may be instituted for a few weeks; then, if improvement as noted by x-rays and clinically is not marked, the lesion should be removed by a partial gastrectomy.

If the patient has been having stomach symptoms for many years, and reaches the age of 35 years, the same routine should be enforced.

In the early stages of disease the diagnosis is difficult, but it is in the early stages that the diagnosis is important so that proper treatment can be given. It has been shown by Dr. Margaret Warwick that in about 23 per cent of cancers of the stomach coming to necropsy the cancer is still confined to the stomach, and that many of these deaths result from perforation of the cancer and peritonitis, and not from the constitutional effects of cancer. It seems probable that, if at necropsy 23 per cent of gastric cancers are still limited to the stomach, an earlier diagnosis and a proper operation would uncover a larger percentage of cases in which the cancer was confined to the stomach and could be cured by partial gastrectomy.

It is only by adopting some plan to follow through to a definite diagnosis and treatment the earliest signs to stomach trouble that the enormous mortality from gastric cancer can be reduced.

—J. Shelton Horsley, Richmond, Va.,
In "The Bulletin."

LEPROSY, A WORLD PROBLEM

Dear Dr. Long:

Illnesses and other interruptions put me far behind in the reading of my medical journals. When finally I opened *The Nebraska State Medical Journal* of March, '32, some months ago, I was gratified to find your editorial, "Nebraskans' Contribution to the Chiengmai Leper Asylum."

It is most desirable that medical men the world over should become more and more interested in the world problem of leprosy, for it is nothing less than a world problem.

Twenty-five years ago the number of lepers in the world was estimated at one million, later at two millions and at present at three millions.

Dr. Robt. G. Cochrane, secretary of the British Empire Leprosy Relief Association, in a recent article, says that probably there are fully ten millions of lepers in the world. I know Cochrane, having met him in leper work in India and travelled with him, visiting leper asylums in Burma, Straits Settlement, Federated Malay States and Siam. I regard his opinions as sound. His wide travels in Asia, Africa and other lands in the study and evaluation of leper conditions entitle his opinions to great weight.

A large part of the present extensive interest in leprosy is due to the initiative of American medical men. The outstanding work of American physicians in the Philippines has called the attention of the world to the great leper problem in a remarkable way.

The Philippine asylum, the largest in the history of the world, has given wide opportunity for the study and observation and treatment of the disease.

Here also originated the "Leonard Wood Memorial" the object of which is the widest possible scientific study of leprosy and dissemination of information, looking forward to the final eradication of leprosy from the world.

Of course, our own American leper problem is small and comparatively simple, for there are probably not more than two thousand leper people in the United States.

But we as medical men are presumed to be persons of wide vision and we each one should lend our attention, our interest and our gifts to this, one of the greatest health problems of the world.

—JAMES W. McKEAN,
Claremont, Calif.

LEGISLATIVE MATTERS

A number of bills pertaining to medical matters and welfare work of interest to the medical profession were before the legislature during the winter. One particularly vicious bill, had to be killed twice before the final quietus. It seems unlikely at the time this is written that any legislation affecting the medical profession will be passed during the sessions.

THE OVERSUPPLY OF PHYSICIANS*

The apprehension has been expressed that the reduction in the number of medical schools will lead to a shortage of physicians in this country. A study of the immediate past indicates rather the contrary and that there is larger production than necessary, and at the present time there is an oversupply of physicians in this country. The future supply is governed by a number of factors, some of which are largely problematical. The changes in primary, secondary, and college education may in the future allow medical students to graduate at an earlier age.

A special problem has been introduced in recent years by the large number of American students studying in the medical schools of Europe. At the present time the addition to the profession each year from all sources is probably between 5,200 and 5,400 physicians which will probably be higher in the future particularly, because of American students studying abroad who will return to practice in this country.

It is estimated on the present ratio of increase that there will be 171,700 physicians in 1940, 186,600 in 1960, and 210,800 in 1980. At the present time the number of persons per physician in the United States is approximately 780. In 1940 it will be 760, in 1960 about 730, and in 1980 just under 700.

An adequate medical service for this country could probably be provided for by about 120,000 active physicians, if they were distributed in relation to the medical needs and their efforts were properly correlated. On such an assumption, there is an oversupply of at least 25,000 physicians in this country. If the present rate of supply is continued, the number of physicians in excess of indicated needs will increase.

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*Abstracted from the Final Report of the Commission on Medical Education, New York, Office of the Director of Study, 1932. Taken from Federation Bulletin.

The effects of an oversupply of physicians on the quality of medical service and indirect influence on the type of student seeking admission to medical schools is deserving of serious consideration. Those responsible for medical education should have this situation clearly in mind.

ADVERTISING BEGINS TO CLEAN HOUSE

Announcement is made in a recent issue of *Printers' Ink* of the establishment, within the advertising industry itself, of a permanent review committee, which is to operate as a court of appeals. The committee is an outgrowth of a movement begun in May, 1932, to develop a code to control advertising practices in order to prevent a continuing trend toward the discrediting of all advertising. The plans of the permanent committee, which is at this time headed by Ralph Starr Butler, representing the Association of National Advertisers, and himself advertising manager for General Foods Corporation, involve the development of a code and of methods for handling violations of the code. Already the code drawn up includes seven points that tend to discredit advertising. These are:

1. False statements or misleading exaggerations.

2. Indirect misrepresentation of a product or service through distortion of details, either editorially or pictorially.

3. Statements or suggestions offensive to public decency.

4. Statements which tend to undermine an industry by attributing to its products, generally, faults and weaknesses true only of a few.

5. Price claims that are misleading.

6. Pseudoscientific advertising, including claims insufficiently supported by accepted authority or that distort the true meaning or application of a statement made by professional or scientific authority.

7. Testimonials which do not reflect the real choice of a competent witness.

It is interesting to find that advertising has at least begun to realize the menace inherent in many current advertising practices, and that it is doing the best thing possible under the circumstances; namely, cleaning its own house. It has been the pride of organized medicine that it invariably cleans its own house. It is to be hoped that this movement in the field of advertising, begun under such excellent auspices, will lead to much needed reforms.—*Jour. A.M.A.,* Feb. 25, 1933.

OUTSTANDING PIONEER OBSTETRIC EXPERIENCES—PATHETIC, HUMOROUS

OBSTETRIC ACCIDENT IN FILTH AND POVERTY

In September, 1906, I was called 20 miles into a sparsely settled section to attend a woman in confinement. The patient had been in hard labor for 72 hours. Another physician had been there and also another woman. Patient was strong and muscular. The case was a breech presentation, one foot protruding and the breech well wedged into the birth canal. It was my policy in obstetrics to give the mother the benefit of the doubt. The home was one of the dirtiest places I ever saw and dirt and poverty made it awful. To all outward appearances the woman was in the last hour of life, without help; so I immediately gave her an anaesthetic, placed the hook of my Hodge forceps over the groin of the child with much care so as not to injure the mother and delivered the child. The baby's groin was lacerated down to the large vessels. Laying it aside I cared for the mother. I then turned to the babe which I thought dead, but found it persisted in living. Securing hot water I scoured an old dishpan, sterilized my instruments and finding the hip joint quite alright, I sutured the gaping wound, and gave a small girl directions how to apply wet dressings. I made two subsequent visits. Recovery of mother and babe was without incident. The father informed me many years later the wife was still living and the baby girl was now married.

—A. L. Mathews, Calloway.

MEDICO-LEGAL DISABILITIES

In the consideration of an accidental injury of a claimant in which intentional external force was applied by the injured or applied with his consent, and which force affected the result, the cause or means, is the deciding element, if provision of liability is restricted to "accidental means."

—Czar Johnson, Lincoln.

ALLERGY HINT II

Skin tests are merely a clue, and overdependence upon them is a fallacy. Their significance must be determined clinically.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT VI

Tuberculosis is not inherited. It is even questionable where any "tendency" to it is inherited. What is inherited is the bad habits that predispose to it, and the excessive numbers of bacilli around the house. These things are not transmitted biologically; they are inherited in the same way one inherits old furniture or other property.

—Miles J. Breuer, Lincoln.

EDITORIAL PARAGRAPHS

Without mixing medicine and politics: All of us are for Roosevelt and we hope he succeeds.

The annual meeting of the Nebraska State Medical Association will be held at the Fontenelle Hotel, Omaha, May 23, 24. 25.

Evidently the Coffey-Humber treatment is not abandoned for an announcement at hand announces diagnostic clinics recently established.

The annual meeting of the American Association for the Study of Goitre will be held in Memphis, May 15, 16, 17. A pretentious program promises well.

A little geography now and then is good for the medical man: Pensacola, Florida, is about as far west as Chicago and Nome, Alaska, is farther west than the Sandwich Islands.

Dr. Charles Mayo of the Mayo Clinic at Rochester, Minnesota, has made the statement that 46% of deaths occurring before the age of 60 are traceable to teeth and only 41% to tonsils.

A judgment for $16.000 was obtained by an administrator against an Omaha osteopath who had operated on a patient for hemorrhoids, the patient dying from post operative hemorrhage.

The time limit for offering papers for the annual meeting program is about up; but if you have something in mind the committee will no doubt accommodate you if you get in touch with Dr. R. B. Adams, secretary-treasurer, at once.

Space does not permit us to publish the program of the Auxiliary to the American Medical Association meeting to be held at Milwaukee coincident with the meeting of the American Medical Association. The program looks very enticing.

A suggestion comes from a valued correspondent that provision be made for payment of dues in installments, especially in component societies of the metropolitan class where the local dues mount to two figures. The suggestion is not without merit, but perhaps too late for action this year.

This is to advise the next Nebraska basic science examination will be given May 2-3, University College of Medicine, Omaha. The next medical examination will be given June 7-8-9, University College of Medicine, Omaha. All applications should be on file at least 15 days prior to date of examination.

The sudden death at the age of sixty-six of Dr. Alfred S. Burdick, president of the Abbott Laboratories, is announced. He was a dynamic personage. In fact the Abbott plant, which is one of the largest and best in the United States, is in many respects a tribute to the genius and wisdom of Dr. Burdick. He had surrounded himself with some of the best executives as well as professional men and thus built up an organization which will continue to efficiently function, notwithstanding Dr. Burdick's premature death.

"The successes of psychiatry are far greater than most people suppose. Statistics are difficult to secure, but it is estimated that one person in twenty-two in New York State becomes a patient in a mental hospital at some time during his life. But among the thousands that recover there are none willing to boast of their mental breakdowns, though they speak jubilantly of operations. Old Man Psychiatry may be ignored by his former patients, he may be criticized by his colleagues, and at times he may seem to lag in the Procession of Medical Progress; none the less he has his moments."

The Otoe County Bulletin says: "The auxiliary is doing a fine bit of work in bringing the doctors of Otoe county together in the social hours, prior to and after the meetings. Every physician and his wife should strive to support this movement of progress in our society. We need not complain about our wives lacking interest in medical problems if we do not support this excellent voluntary effort of theirs to help solve the great problem of each small medical unit—that of lack of attendance." The most hopeful thing in medicine is the interest of the doctor's wife in his profession.

Dr. Victor E. Levine, professor of Bio-chemistry at Creighton Medical, is responsible for a series of syndicated health articles appearing in the lay press. In a recent article he paid a handsome tribute to the physician a small part of which is here given: "Your physician is a man of great physical energy. He must ever be on the job. Advising rest for his patient, he never finds time to secure any himself. An emergency or a confinement may rob him even of his sleep. His may not even be the opportunity to take full time out for a meal. Few, indeed, are the occasions in which he may socialize with his wife and children."

A motorist association has appeared in the field with a proposition that they pay for first aid to injured insured motorists and they appoint "official doctors." A clipping from their circular letters is here given: "First Aid treatment to be rendered only in case the member's automobile is involved in an accident. You may treat any member, occupants of member's car, pedestrians, occupants of other automobile involved in the accident and send the bill to this office for payment. This service is limited to ten dollars on any one accident." This may be a good thing; but we suggest it may be just as well for physicians to be cautious. No doubt the uppermost thought in the minds of the organizers is to provide jobs for the head officers.

Dr. Edward H. Ochsner, Chicago, says: "Human progress in most lines has always been very largely the result of unhampered personal endeavor and rarely if ever the result of governmental action primarily. Will we never be able to learn from experience and must there always be recurrent periods of halt and even retrogression in human progress? American medicine and dentistry stand today at the threshold of their greatest opportunities and beside the abyss of their greatest dangers; the former because of their marvellous advances in the recent past, the latter because they are being pestered and annoyed by a small but vociferous group of misinformed, uninformed, unwise and in a few instances self-seeking, selfish, self-appointed lay advisers. There are troubled times for these two allied professions; the men who stand firm now will deserve the gratitude of future generations of men and women."

"All you need to get back to the farm," says a writer, "is backbone" and some liniment to rub on it.—Palatka (Fla.) News.

Singing increases the blood-pressure, declares a southern doctor, but he doesn't say whose.—Boston Herald.

NECROLOGY

George S. Bowen, Greeley, Nebr.; Long Island College of Medicine, 1883; in practice at Greeley, since 1884; died of paralysis February 20, 1933, aged about seventy-eight years. A widow, two daughters and a son, survive.

Harry A. Fulton, Lincoln, Nebr.; Nebraska University College of Medicine, 1898; practitioner at Havelock since 1905; died February 24, 1933, aged about sixty-four years.

Thomas H. Line, Grafton, Nebr.; native of Boonsboro, Maryland; Rush Medical College, 1881; practitioner at Marquette, 34 years, at Central City thirteen years and at Grafton about two years; member, Nebraska State Medical Association since 1886; a man who gave his best to the community in civic affairs as well as in medicine; an ardent student, a modest, yet colorful, character; a writer of some note on historical, masonic and medical matters; died of cerebral hemorrhage February 26, 1933, aged seventy-four years. A daughter survives.

Joseph E. Waller, Claremont, Calif.; Lincoln Medical College, 1896; practitioner, successively at Bethany, Salem, Dorchester, and Arapahoe, from date of graduation to 1930, when he moved to Claremont, Calif.; died of organic heart disease, February 14, 1933, aged about eighty-two years. A daughter and two sons survive.

Emory L. Ernhout, Swan Lake, N. Y.; Bellevue Hospital Medical College, 1879; practitioner in South Omaha for several years in the early nineties; died February 2, 1933, of a heart affection, aged about seventy-five years.

G. W. Weeter, Grand Island, Nebr.; medical college data unavailable; in his earlier years a practitioner in Pennsylvania; from 1888 to 1917 in practice in Grand Island, Nebr.; died March 9, 1933, aged eighty-six years. He is survived by a son and daughter.

SECOND INTERNATIONAL GOITER CONFERENCE

The American Association for the Study of Goiter has arranged for a large representative American delegation to go to the International Goiter Conference at Berne, Switzerland, August 10, 11 and 12th, 1933.

The delegation will be made up of the officers and members of the Executive Council, the members of the Invitation Committee, the Geographic and Delegates-at-large of the A. A. S. G., representatives of the American Medical Association, the leading goiter clinics, the national medical and surgical bodies of the United States and Canada, and those from the United States army, navy, and bureau of public health.

Members of the profession in good standing in their state or provincial societies who may wish to join the delegation in an unofficial capacity but allowed full participation in the voyage program and the reduced S/S rates, may do so by communicating with the Geographic Delegate of their Section, any member of the Invitation Committee, or Dr. J. R. Yung, Corresponding Secretary, Terre Haute, Indiana. Proof of society standing will be required and should accompany request for enrollment, which is necessary before booking arrangements can be made with the S/S agent in charge of transportation. Dr. Charles H. Arnold, 908 Terminal Bldg., Lincoln, Nebr., delegate representing the American Medical Association, will be glad to assist anyone in making arrangements.

Members of the medical profession, interested in goiter, who are contemplating going to Europe in 1933 should not fail to take advantage of this exceptional opportunity.

A BLOODGOOD CANCER CLINIC

Creighton University Medical School, Omaha, Nebraska, announces that, at the Creighton Memorial St. Joseph's Hospital, there will be a three day cancer conference conducted by Dr. Joseph Colt Bloodgood and Dr. Charles F. Geschickter of the Surgical Pathological laboratory of Johns Hopkins Medical School and Hospital on April 19, 20 and 21st. They will be assisted and furnished with clinical material by the staff of Creighton University Medical School.

New growths in all their phases, the clinical, the radiological, the gross and the microscopical will be presented with an attempt to follow the order of subjects as outlined on the program below:

FIRST DAY

9-12 A. M.—For oral surgeons and others interested in jaw, teeth and oral cavity.

2-5 P. M.—For orthopedic surgeons and others interested in diseases of bones and joints.

Evening Meeting—Bone dystrophies, Dr. Geschickter.

SECOND DAY

9-12 A. M.—Tumors of the breast.

2-5 P. M.—Tumors of uterus and ovary.

Evening Meeting—For nurses, dentists and physicians. "What Every Physician Should Know About Cancer", Dr. Bloodgood.

THIRD DAY

9-12 A. M.—Tumors of skin and appendages—lymph glands. Tumors of the genito-urinary system: kidneys, ureters, bladder and prostate.

2-5 P. M.—Tumors of gastro-intestinal tract. Tumors of the chest.

A sincere invitation is extended to all practitioners of medicine and dentistry interested in cancer.

OLD FOLKS

Just a word of commendation—
It isn't much the old folks ask—
Just some slight appreciation
In token of the past.
It's not much, perhaps, that they've accomplished;
So much they might have done beside
To add to worldly happiness,
But oh, how they have tried.

Just a little recognition
Of the things they have tried to do.
Many perhaps were blunderous,
And failed their whole lives through;
But you have seen the fight they made
And know they did their best
To be of service to mankind,
Can't you forget the rest?

They were born into a different atmosphere
From what you know today;
They had no such advantages
As lie along your way.
They fought with cruder instruments
But won most all the bouts,
And most of what you have today,
You owe to these old scouts.

For all their years of life they've stood
As watchmen on the wall;
Some did not always stand erect,
A few might even fall;
But always a stern, unwavering crew,
Held by a purpose bold,
They stood and fought for better things
With brave and tenuous hold.

—G. A. Remy, Ainsworth.

AUXILIARY NEWS LETTER

Plans are being made for the state meeting to be held in Omaha on May 23, 24 and 25. Mrs. Clyde Roeder has appointed Mrs. C. C. Tomlinson of Omaha as chairman of the entertainment committee. Other members of this committee are: Mrs. Clyde Roeder, Mrs. Lynn Hall, Mrs. George Neuhaus, Mrs. Paul Ellis, all of Omaha, and Mrs. J. Woodward, of Lincoln. A meeting was held at the home of Mrs. C. C. Tomlinson where preliminary plans for the state meeting were discussed. All entertainment will be most informal.

Mrs. Charles W. Pollard of Omaha was appointed chairman of the nominating committee. Other members of this committee are: Mrs. Selby, North Platte; Mrs. Floyd Rogers, Lincoln; Mrs. George W. Egermayer, Shubert, and Mrs. Sall, Beatrice.

* * * * * *

The Richardson County Auxiliary elected officers at their last meeting: They are; Mrs. William Shepherd, Rulo, president; Mrs. J. C. Gillespie, Falls City, vice president; Mrs. O. F. Lang, Falls City, secretary. This auxiliary has helped sponsor two public lectures—the first one in January by Superintendent Lefler of the Lincoln Public Schools, and the second, just recently, by Dr. F. W. Heagey of Omaha, who talked on the subject of child health. Dr. Heagey is a member of the executive committee of the White House Conference on child health. He discussed the findings of this conference and explained the work of that great body of experts in the field of child health and training. He hopes to see the recommendations of the White House Conference on this subject carried out in Nebraska.

* * * * * *

Otoe County Auxiliary was organized on February 13th. The following officers were elected: Mrs. D. D. Stonecypher, president; Mrs. C. G. Zimmerer, vice president; Mrs. W. C. Kenner, secretary-treasurer, all of Nebraska City.

This auxiliary plans to make the organization a social gathering of the doctors and their wives, in order to encourage the attendance of the medical meetings by having dinners before the meetings.

* * * * * *

Two auxiliary members put on a program before the Woman's club at Madison, on the Basic Science Law and the Report of the Committee on the Cost of Medical Care.

—Mrs. William H. Stokes,
Publicity Chairman.

TUBERCULOSIS ABSTRACTS

The modern physician appreciates that whenever a case of tuberculosis is discovered every contact should be examined. To support him in this practice tuberculosis associations throughout the country are this year striving to focus public attention, through the medium of an educational campaign, on the communicability of tuberculosis. The slogan is, "Tuberculosis—From whom did he get it—To whom has he given it—Examine and protect every contact." Incorporated with these words is an illustration showing a doctor examining an x-ray plate to suggest also the necessity of relying on this instrument of precision for making the diagnosis. One of the active crusaders of this educational movement is J. Arthur Myers of the Department of Preventive Medicine and Internal Medicine, University of Minnesota. Space permits only a few quotations from his William Snow Miller lecture, bearing on the communicability of tuberculosis.

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

OVERCOMING DIAGNOSTIC DIFFICULTIES

There have been two stumbling blocks in our present program of tuberculin-testing and x-ray examinations of positive reactors as a case-finding measure. The first is the objection presented by parents and others to instrumentation in the administration of tuberculin. In the hands of most workers the Moro test has not proved as accurate as the Pirquet test. However, Lovett has called attention to the percutaneous test, which consists of rubbing the skin with ether until hyperemia appears, in an attempt to remove the oil from the pores. Then a preparation containing tuberculin is rubbed into this area of skin. She finds this test fully as accurate as the Pirquet test but not as accurate as the Mantoux (intracutaneous) test.

FROM WHOM DID HE GET IT?
TO WHOM DID HE GIVE IT?

The second stumbling block has been the cost of x-ray films. If one wished to make a tuberculosis inventory of 25,000 school children or 10,000 university students, the cost of the x-ray films alone was stupendous. As an example of the attempt to solve this difficulty may be cited the experiment of the Queensboro Tuberculosis and Health Association which stimulated a manufacturer to develop a paper x-ray film on rolls. With the special equipment devised it is possible to make a thousand chest exposures in a single day with one machine.

In applying this case-finding method to university students, Diehl calls attention to examinations of 2,500 entering students in the fall of 1931. Among approximately 800 reacting positively to tuberculin and having x-ray-film examinations of the chest were found 15 cases of adult type of pulmonary tuberculosis in addition to many cases of pleurisy and childhood type of tuberculosis. One of the cases with adult type of pulmonary had advanced disease, five were moderately advanced, and nine were minimal. The control of these cases with reference to dissemination of tubercle bacilli on the campus, as well as individual treatment of the cases, is a service worth much more than it costs the institution and the student body. The fact that more than a half-dozen great American universities instituted similar tuberculosis-finding procedures in the fall of 1931 is of great significance.

Sanatoria are beginning to employ full-time epidemiologists, whose duty it is to work with family physicians of patients admitted to their institutions in finding the source of their patient's disease. Moreover, they place under examination and observation those persons who have been in contact with their patient. This procedure at the Minnesota State Sanatorium is proving very effective.

COLLAPSE THERAPY A PREVENTIVE MEASURE

Recent advances in collapse therapy are doing great good for individual patients, but a greater good by closing off lesions which otherwise would be sources of exposure to vast numbers of people. The discovery of the fact that many patients may remain ambulatory while artificial pneumothorax is being induced, or soon afterward, promises to do much to relieve congestion in rooms, wards and hospitals for tuberculosis patients, to relieve the patient of economic strain, to relieve the tax-payer of a considerable burden and to prevent the spread of tuberculosis. The chief problem is one of finding cases suitable for such treatment, that is, before the disease has become extensive and there is much breaking down of tissues. Past experience has taught us that unless such case-finding methods are used in order to detect the disease in the earliest possible state, many are too advanced to respond well to any form of treatment. Therefore, we must not wait for patients to come to us with complaints, but must go out and find them months and even years before they would develop symptoms.

A summation of the facts of tuberculosis now at hand points to prevention of the initial and all subsequent infections as the goal for which we must strive. This means that pressure must be brought to bear on all the modes of attack on tuberculosis now in existence, so that each will function at the highest possible efficiency. The principal methods are all based on case-finding, so that the source of exposure may be stopped.

Recent Developments in Our Knowledge of Tuberculosis, J. Arthur Myers, Am. Rev. of Tuberc., Feb., 1933.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was held Feb. 14, President Riley presiding.

The scientific program was presented by the Pottawattomie County Medical Society; therefore, President Riley turned the meeting over to Dr. Cogley, president of the Council Bluffs Society.

The first paper was by Dr. S. D. Maiden, his subject being, "Bronchoscopy and Esophagoscopy From the Standpoint of General Medicine." This talk was illustrated with x-ray films. It was discussed by Dr. Potts.

The second presentation was by Dr. Aldis A. Johnson, who chose as his subject, "Pericarditis With Case Report." Dr. Augustine, who saw this case with Dr. Johnson, stressed certain points in connection with examination and treatment of the case.

The third paper on "Management of Prostatic Obstruction" was read by Dr. Gerald V. Caughlan. This was illustrated by lantern slides. Doctors Langdon and Boler discussed it.

The regular meeting of the **Omaha-Douglas County Medical Society** was held Feb. 28, 1933, at 8 p. m.

The meeting was called to order by President Riley.

The first half of the scientific program was in charge of the staff of Lutheran hospital.

Dr. L. S. McGoogan presented the first paper, his subject being "Effort Thrombosis of Subclavian Vein in Puerpurium."

The second paper was by Dr. L. E. Hanisch who presented a "Comparative Study of Complications in Spinal and Ether Anesthesia," illustrated by lantern slides.

The second half of the program was presented by the staff of Methodist hospital.

Doctor W. H. Stokes' subject was "Strabismus and Its Management," which was illustrated by lantern slides.

The second paper, "A Dehydration Treatment in Toxemia," by Dr. W. H. Taylor, was also illustrated by lantern slides and charts.

Dr. C. R. Kennedy talked on the "Use of the DePetz Machine in Gastroenterostomy," and passed one of the instruments around for inspection.

—Abst. O.-D. Bulletin.

Forty-five physicians representing Blair, Herman, Arlington, Craig, Oakland, Omaha and Fremont form the charter membership for a **Tri-County Medical Association** organized at Fremont, March 1. Dodge, Burt and Douglas are the counties represented.

Dr. David Bloch of Arlington, is president; Dr. Guy Seward of Fremont, vice president, and Dr. Andrew Harvey of Fremont, secretary-treasurer.

Thirty-eight physicians and auxiliary ladies attended the meeting of the **Madison Six County Medical Society** at the Episcopal Parish house, Norfolk, February 21. Following a dinner (served at fifty cents a plate) the following program was given:

"X-ray in General Medicine," Dr. A. F. Tyler, Omaha.

"Case Report—Subacute Lymphatic Leukemia in a Child", Dr. George Salter, Norfolk.

"Case Report—Chronic Myelogenous Leukemia in an Adult," Dr. E. L. Brush, Norfolk.

Drs. George Salter and E. L. Brush gave case reports of very recent cases in practice. Dr. Tyler gave a lecture, illustrated by numerous slides, to demonstrate the check-up value of the x-ray in diagnosis and also the therapeutic value of the x-ray in certain conditions.

The relation of physicians to county boards was discussed and it is thought a satisfactory understanding is within reach.

The **Madison Six County Medical Society** had the March meeting on the 21st at the Norfolk State Hospital, following a splendid dinner served by the hospital authorities at fifty cents per plate. Upward of fifty physicians and their ladies were present.

The program put on by hospital physicians was well received, and was as follows:

"The Use of Narcotics and Sedatives at This Hospital," Dr. C. C. Drummond.

"Case Reports" (Malignant Conditions), Dr. J. K. Morrow.

"The Use of Intravenous Sodium Amytal in Mental Cases", Dr. S. W. Shelton.

"Some Responsibilities of the General Practitioner in the Care of Mental Patients", Dr. T. M. Barber.

Hypnotics and narcotics in use at the hospital include most of the well-known remedies, old and new, and in addition, hydrotherapy. The use of sodium amytal intravenously was extolled in cases of catatonia and its use and effects demonstrated on two patients. The use of caustic pastes in malignant conditions of elderly patients was discussed and several patients shown.

The **Richardson County Medical Society** and auxiliary had dinner at the hotel Weaver, Falls City, February 21. The ladies then repaired to the home of Dr. and Mrs. Burton where they held their business session. Mrs. Sheppherd was elected president of the auxiliary.

The doctors' meeting was held at the hotel and very interesting papers were discussed on tumors of the mouth and neck. The fact was stressed that any tumors or ulcers of the mouth should receive immediate treatment, particularly after the age of forty.

The **Otoe County Medical Society** met at the home of Dr. W. C. Kenner, Nebraska City, for dinner served by the auxiliary ladies, February 13.

Dr. Clayton Andrews, Lincoln, discussed Thyroid Disorders, reviewing Plummer's classification. An interesting discussion by the members followed.

Dr. F. W. Webster, Lincoln dental pathologist, presented some plaster models and lantern slides to illustrate dental pathology of the mouth. He again stressed focal infections to be as important as ever.

Dr. K. S. J. Hohlen, Lincoln, gave a motion picture demonstration of Encephalography as an Aid to Diagnosis. Dr. Hohlen contends that infections of the meninges in early childhood is an important cause of epilepsy, but that future investigation must enlighten us further.

—R. H. Lodor, Sec'y.

HUMAN INTEREST TALES

Dr. D. T. Martyn, Jr., Columbus, was reported ill, recently.

Dr. O. F. Lang, Falls City, is the new head of the Country club.

Dr. and Mrs. H. E. Potter, Fairbury, visited in Boise, Idaho, in February.

Dr. J. R. Beatty, Butte, was reported a patient in a Lincoln hospital recently.

Dr. and Mrs. C. C. Gafford, Wymore, are spending the late winter in California.

Dr. A. D. Cameron, Kearney, attended the inauguration at Washington, March 4.

Dr. A. C. Stokes was reelected chairman of the Omaha Chapter of the Red Cross, recently.

A car stolen from Dr. A. J. Callaghan, Columbus, was found abandoned the next day near Norfolk.

Dr. J. H. Morrow and son, Merna, made an extended auto tour through the southwest, recently.

Dr. C. A. Selby, North Platte, suffered a badly burned hand in an attempt to light a gas burner.

Dr. N. S. Mercer, native Omahan now living at Sussex, England, visited in Omaha, during the winter.

A quantity of opiates was stolen from the medicine bag of Dr. L. H. Dunham, Scottsbluff, the latter part of February.

Dr. E. E. Boyd, Central City mayor, was assaulted in his office recently and suffered a broken jaw in consequence.

The hearts of the members of the association go out to Dr. and Mrs. P. H. Bartholomew, Lincoln, in the loss of their son, recently.

Dr. Charles H. Arnold, Lincoln, has been chosen one of the delegates to the International Goiter Conference at Berne, Switzerland, August 10, 11, 12th.

Dr. F. W. Heagey, Omaha, spoke on "Child Health" before the Falls City Woman's club and the Richardson County Women's Auxiliary, February 23.

Dr. B. F. Bailey, Lincoln, delegate to the A. M. A., was elected president of the Northwest Regional Medical conference at St. Paul, Minn., in February.

Omaha was represented at the meeting of the American College of Physicians at Montreal, by Dr. Adolph Sachs, Dr. M. C. Howard, Dr. G. W. Dishong and Dr. John R. Kleyla.

Dr. and Mrs. J. A. Waggoner, Humboldt, recently gave a dinner to some medical and lay friends, commemorating the fifty-seventh anniversary of Dr. Waggoner's entry into practice.

Dr. Gladys Henry Dick of Chicago, a former Pawnee City girl, and her husband, Dr. George F. Dick, were recently awarded the Cameron prize of the University of Edinburgh for their work on the etiology and treatment of scarlet fever. The prize is one of the most important medical awards. The Drs. Dick became widely known a number of years ago for their isolation of the scarlet fever germ, at which time they originated a serum for that disease.

BOOKS RECEIVED

CHRONIC ARTHRITIS AND FIBROSITIS, Diagnosis and Treatment, by Bernard Langdon Wyatt, M. D., Director of Wyatt Clinic, Tucson, Ariz., author of "Chronic Arthritis and Rheumatoid Affections, With Recovery Records." Cloth, gold stamped, 198 pages, 17 illustrations, price $3.50. William Wood and Co., Baltimore.

THE FUNDAMENTALS OF GOOD MEDICAL CARE, by Roger I. Lee and Lewis Webster Jones, assisted by Barbara Jones. An outline of the Fundamentals of good medical care and an estimate of the service required to supply the medical needs of the United States. Octavo, 300 pages, cloth, price $2.50. University of Chicago Press.

THE INCOMES OF PHYSICIANS, by Maurice Leven. Cloth, octavo, 135 pages, price $2.00. University of Chicago Press.

SURVEY OF MEDICAL SERVICE IN THREE REPRESENTATIVE SOUTHERN COUNTIES, by C. St. C. Guild, M. D., Ph. D., with a statistical appendix by I. S. Falk, Ph. D. Paper, 175 pages, price $1.00. University of Chicago Press.

ORGANIZED MEDICAL SERVICE AT FORT BENNING, GEORGIA, by I. S. Falk, Ph. D. Paper, 120 pages, price 90 cents. University of Chicago Press.

CLINICAL DIAGNOSIS, Physical and Differential, by Neuton S. Stern, A. B., M. D. (Harvard), Associate Professor of Medicine, University of Tennessee School of Medicine, Memphis. 8 mo., 364 pages, cloth cover, published by the MacMillan Co., New York. Price $3.50.

THE MEDICAL SECRETARY, by Minnie Genevieve Morse, member board of registration, Association of Record Librarians of North America, author of "Case Records in Small Hospitals." 6 mo., 162 pages, cloth cover, published by the MacMillan Co., New York. Price $1.50.

DISEASES OF THE HEART, described for practitioners and students by Sir Thomas Lewis, C. B. E., F. R. S., M. D., D. Sc., LL. D., F. R. C. P., Hon. D. Sc. (Michigan), Physician in Charge of Department of Clinical Research, University College Medicine, London; Physician of the Staff of the Medical Research Council; Physician in Chief (Pro Tem) Peter Bent Brigham Hospital, Boston; Honorary Fellow New York Academy of Medicine; Corresponding Member Association of American Physicians and Interstate Postgraduate Medical Association. 8 mo., 298 pages, the MacMillan Co., New York. Price $3.50.

MARTYR TO MODE

Doctor—"Have you any idea how your wife caught this terrible cold?"

Husband—"I think it was on account of her coat."

"To thin, eh?"

"No; it was last winter's one, and she didn't wear it."—Bennington Banner.

A college professor says the price of civilization is insanity. If he thinks the present brand of it is worth going insane over, he's crazy.—Thomaston Times.

ROSTER OF OFFICERS—1933

Arthur E. Cook, Randolph, President	1933
Adolph Sachs, Omaha, President-elect	1934
Homer Davis, Genoa, Vice President	1934
E. B. Hamel, Hastings, Vice President	1934
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1933
R. D. Bryson, Callaway, Chairman	1935
H. J. Lehnhoff, Lincoln	1933
W. R Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

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Annual Meeting, Fontenelle Hotel, Omaha, May 23, 24, 25, 1933

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TENTATIVE PROGRAM
ANNUAL MEETING NEBRASKA STATE MEDICAL ASSOCIATION

Fontenelle Hotel, Omaha — May 23, 24, 25. 1933

Tuesday, May 23, 1933—8:30 A. M.

Call to Order—Invocation .... Dr. Frank Hosmer, Pastor First Presbyterian Church, Omaha
1. Illumination and Headache, Demonstration of Lighting Methods .... L. B. Bushman, Omaha
2. Live Maggots in Treatment of Osteomyelitis .... S. J. Carnazzo, Omaha
   Discussion—T. Y. Dorwart, Lexington.
3. Eczema .... C. C. Tomlinson, Omaha
4. Chronic Arthritis .... Floyd L. Rogers, Lincoln
5. Surgical Possibilities of the Deformed Arthritic .... J. E. M. Thomson, Lincoln

Tuesday, May 23, 1933—2:00 P. M.

Installation of the President of the Nebraska State Medical Association ... Dr. Lucien Stark, Presiding
Introduction of President-elect Dr. Adolph Sachs .... Dr. A. E. Cook. President
Address .... Dr. Adolph Sachs, President-elect
1. Surgical Address .... J. Frederick Langdon, Omaha

2. *The Importance of the Irritable Colon in Every Day Practice......Dr. H. L. Bockus, Professor of Gastro Enterology, Graduate School of Medicine, University of Pennsylvania, Philadelphia*
3. Diverticulitis ......F. L. Wilson, Stuart
4. Pitfalls in Allergic Diagnosis......Geo. R. Underwood, Lincoln
5. Spontaneous Rupture of Uterus in Early Pregnancy—Case Reports......F. J. Murray, Omaha

Wednesday, May 24, 1933—9:00 A. M.

1. Large Fibromyoma Complicating Puerperium With Spontaneous Expulsion of the Tumor With Case Report......M. Margolin, Omaha
2. Social and Economic Aspects of Traumatic Neurosis......Geo. Neuhaus, Omaha
3. Sympathetic Activity in Certain Diseases—Diagnosis and Treatment......Earl Connolly, Omaha
4. The Country Doctor—His Status......Dr. A. A. Conrad, Crete
5. The Colostomy—Indications, Methods and Points of Practical Interest Regarding Its Care......Dr. R. Russell Best, Omaha

Wednesday, May 24, 1933—2:00 P. M.

1. *Transurethral Prostatic Resection......Dr. N. G. Alcock, Iowa City, Iowa*
2. Clinical Findings in a Series of Atypical Malignancies......Dr. Frank Conlin, Omaha
3. Pathological Cervix ......Dr. M. E. Grier, Omaha
4. Symposium on Deep X-ray Therapy:
    1. Recent Advances in Radiation Therapy......H. B. Hunt, Omaha
    2. Treatment of Fibroid Tumors and Uterine Hemorrhage......A. P. Overgaard, Omaha
    3. The Present Status of Radiation Therapy......J. F. Kelly, Omaha

Thursday, May 25, 1933—9:00 A. M.

1. Postoperative Morbidity and Mortality......Dr. A. L. Miller, Kimball
2. Medical Economics ......Claude A. Selby, North Platte
   (Closed Meeting)
3. Report of the Delegate to Council on Medical Education......Dr. J. S. Welch, Lincoln
4. Gastric Surgery......J. E. Uridil, Hastings
5. Emergencies Met in General Practice......R. E. Roche, Sidney

Thursday, May 25, 1933—2:00 P. M.

1. Medical Address ......Dr. Lothar F. Egen, Hastings
2. *Management of Hepatic Disease......Dr. Chas. A. Elliott, Professor of Internal Medicine, Northwestern University of Chicago*
3. *Complications of Pulmonary Tuberculosis......Dr. L. A. Conway, Colorado Springs, Colorado*
   Discussion—J. F. Gardiner, Omaha.
4. Fixation Position for Optimum Joint Function......Dr. Robert D. Schrock, Omaha
5. Avertin Anesthesia in Electro-Surgery......Dr. A. F. Tyler, Omaha

TENTATIVE PROGRAM
WOMAN'S AUXILIARY TO THE NEBRASKA STATE MEDICAL ASSOCIATION*

Registration at Headquarters......Hotel Fontenelle

Tuesday, May 23, 1933

10:00 A. M......Executive Session—Headquarters
12:30 P. M......"Dutch Treat" Luncheon
2:30 P. M......Trip Through Joslyn Memorial and Organ Recital

Wednesday, May 24, 1933

10:00 A. M......Annual Business Meeting—Headquarters
Mrs. Clyde Roeder, Presiding
12:30 P. M......Luncheon and Program—Hotel Fontenelle
Make Reservations at Headquarters ($.60)
6:30 P. M......Annual Banquet—Fontenelle Ballroom

Thursday, May 25, 1933

9:30 A. M......Executive Session—Headquarters
Mrs. B. F. Williams, Presiding

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*Note: See page 196.

MANAGEMENT OF ACUTE INTESTINAL OBSTRUCTION*

THOMAS G. ORR, M. D.,
University of Kansas School of Medicine,
Kansas City, Kansas.

In a consideration of the treatment of acute obstruction of the small intestine, two definite types must be clearly kept in mind. The pathology of simple occlusion and occlusion with strangulation are quite different, and demand different treatment. The latter, being the more serious of the two, demands greater vigilance and more prompt treatment. Other types of ileus are excluded from this discussion. The etiology, pathology, symptoms, diagnosis and prognosis of acute intestinal obstruction are omitted.

A general outline of the treatment of acute intestinal obstruction follows:

1. Relief of the mechanical obstruction.
2. Removal of any devitalized intestinal tissue.
3. Evacuation of stomach and upper intestine.
4. Evacuation of lower intestine.
5. Restoration of water balance.
6. Restoration of chemical balance.
7. Prevention of starvation.
8. Maintenance of gut tone.
9. Drainage of distended gut - enterostomy.
10. Application of heat to abdomen.
11. Oxygen therapy.
12. Bed posture.

1. Relief of Mechanical Obstruction: Relief of the mechanical obstruction is the great essential factor in the treatment of acute intestinal obstruction. All other treatments are adjunct. This statement must not be construed as advocating operation without giving due consideration to the indications for the adjunct treatments. In some instances it may be wiser to delay operative procedures for a short time while supportive treatment is being given to lessen the operative risk. The selection of the type or time of operation must, of course, be contingent upon the type and duration of the intestinal occlusion. An obstruction of short duration of any type may usually be operated upon without delay, while others with marked dehydration, hypochloraemia, abdominal distention, rapid pulse, cyanotic extremities and Hippocratic facies, demand preliminary treatment with water and sodium chloride before operation. The following case is illustrative:

Mrs. N. C., white female, aged 53, was admitted to the hospital with a history of irreducible hernia for one week. During this time she had had frequent nausea and vomiting. When received in the hospital, her condition was serious. She was cyanotic, pulseless and her blood pressure could not be obtained. After giving her three liters of physiologic saline solution by hypodermoclysis and one liter of glucose intravenously, the blood pressure was recorded as 80 systolic and 60 diastolic. Operation was then done under local anaesthesia and a strangulated hernia with one small necrotic area in the wall of the small bowel was found. The hernia was reduced and an enterostomy was done by the Witzel method, using the necrotic area for introduction of the drainage catheter. In three days, the blood pressure had risen to 120 systolic and 60 diastolic. The blood chlorides on admission were 360 milligrams per 100 cubic centimeters of blood. Two days after admission the urea nitrogen was 120 and the chlorides were 490. During the first 24 hours she received 7,150 cubic centimeters of physiologic sodium chloride solution, glucose solution and water. The second 24 hours she received 5,000 cubic centimeters of solution. Her recovery was uneventful, except for an infected wound. In this case, death would probably have resulted had the patient not received supportive treatment before operation.

2. Removal of Devitalized Intestine: When strangulation of a gut is suspected, early operation is imperative to avoid the toxic effect of necrosis and danger of peritonitis as a result of rupture. Release of the constriction interfering with circulation may be sufficient, providing the blood supply returns to the gut, indicating its viability. If irreparable necrosis has resulted, the extent of operation must depend upon the patient's condition. Very frequently it is much safer to exteriorize the necrotic segment and remove it with a cautery after closing the abdominal wall. A subsequent restoration of the gut tract may be accomplished by the Mikulicz technic. Resection and anastomosis not only consumes valuable time, but the danger of peritonitis is great. If anastomosis is done, enterostomy by the Witzel method above the point of union is usually indicated.

3. Evacuation of Stomach and Upper Intestine: In any obstructive lesion of the intestinal tract associated with abdominal distention and vomiting, frequent or continuous gastric and duodenal drainage, with a Levine nasal tube, should be used. This serves to decompress the upper intestinal tract, and not only gives relief to the patient, but avoids over distention of stomach, duodenum and upper jejunum. This may be supplemented to advantage by permitting the patient to drink as much water as he wishes or by periodic lavage of the stomach with salt solution. A nasal tube causes very little discomfort and may be left in place for several days. Hourly aspirations by the nurse should be directed, or the continuous suction aspiration used as recommended by Wangensteen(1). We have had convalescent patients who aspirated their own stomachs. The indwelling nasal tube is of great advantage at

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*Presented at a meeting of the Lancaster County Medical Society, Lincoln, Nebraska, January 3, 1933.

times in testing the gut function. It may be clamped when liquid diet is started to determine the tolerance of the bowel for food.

The bowel distention should constantly hold the surgeon's attention. The patient is usually not dangerously ill unless distention of the gut or stomach is marked. Undoubtedly, the increase in the intraintestinal pressure above the obstruction is an important factor. Such pressure interferes seriously with the blood supply of the intestinal wall (Owings and Co-workers(2) and Morton(3). It is probable that there is no toxic absorption from the contents of the obstructed intestine until damage has been done to the gut wall by over-distention with disturbance of the blood supply.

4. Evacuation of the Large Intestine: Emptying the bowel below the obstruction is obviously not so important as emptying that portion which is obstructed. Enemata are indicated to remove gas and fecal matter from the colon. They may also aid in restoring the propulsive function after the obstruction has been relieved. A method which has often proven satisfactory is the instillation of 500 cubic centimeters of physiologic saline solution into the rectum every three hours until the bowels move. If retained, it is absorbed and if expelled serves to empty the colon of gas and feces. Such instillations should not be depended upon to restore water and salt balance.

The use of spinal anaesthesia and pituitrin to evacuate the bowel are not recommended for routine use. Neither method should be used if there is a suspicion that a complete obstruction of the bowel exists. In well selected cases good results may be obtained after release of an obstruction, or to re-establish peristalsis in paralytic ileus. Alton Ochsner(4) states that drugs are of little or no value in the treatment of ileus.

5. Restoration of Water Balance: Dehydration rapidly develops in obstructions of the small intestine due to lack of intake and loss of liquid by vomiting. To restore the water balance of the body is a very essential part of the treatment. The initial quantity of water needed varies much, depending upon the anatomical location of the obstruction and the duration of the obstruction. The general appearance of the patient is a helpful guide. The daily intake, for the normal individual under usual conditions, is between two and three liters. As a working basis, one may safely say that if a patient has been vomiting and has had no liquid intake for 24 hours, the quantity of water needed in the first 24 hours of treatment, would approximate four to five liters. If vomiting and loss of liquid has persisted longer than 24 hours, the initial days' treatment should supply additional water up to five to eight liters. No accurate estimate can be made of the actual need for all cases except as they are studied individually. It is readily recognized that the lack of normal intake does not represent the total loss of liquid to the body. The secretions into the upper intestinal tract are also lost. With a normal circulation of liquid into and out of this part of the alimentary tract, amounting to seven or eight liters daily, the approximate loss may be readily calculated when this secretion is all vomited.

There is a danger of giving too much liquid. A general edema may be produced by giving large quantities of salt solution by vein and hypodermoclysis. This, however, is not likely to occur in the first 48 hours of treatment. It is probably also possible to overload the circulatory system in some cases, when there exists cardiac and kidney disease, if solutions are given too rapidly. Evidence of edema of the lungs or brain should always be a signal to discontinue the liquid intake until such symptoms subside.

Water should usually be given as sodium chloride or glucose solution. Distilled water or tap water should be given only by mouth or rectum.

6. Restoration of Chemical Balance: In obstructions of the upper intestinal tract, certain changes take place in the composition of the blood which are readily determined by laboratory methods. The most striking and important change is a decrease in the blood chlorides produced by excessive vomiting of upper intestinal tract secretions. If the vomiting is persistent and the loss of gastrointestinal secretions is great, there also develops an increase in the blood nonprotein and urea nitrogen and an increase in the carbon dioxide combining power of the plasma. These changes not only denote a perversion of the body chemistry, but indicate a destruction of body protein. Other less easily determined changes, such as increased viscosity of the blood, increase in fibrin, decreased oxygen carrying capacity of the blood, increase in cholesterol and increased sedimentation rate also occur, indicating a profound physicochemical disturbance of the body. If the body cells are to be expected to properly function, it is reasonably a part of the treatment of intestinal obstruction to make every effort to return the body chemistry to normal and maintain it within normal limits, if possible, during the course of the disease.

The greatest factors in maintaining the chemical balance are water and sodium chloride administered in proper quantity. Experimental studies have shown that it is possible to restore the chlorides, non-protein and urea nitrogen and carbon dioxide combining power to normal by administering sodium chloride solution. The quantity of sodium chloride necessary to restore the blood chlorides to normal varies in each individual case. A determination of the blood chlorides will indicate the need. If they are found to be less than 400 milligrams per 100 cubic centimeters of blood, 500 cubic centimeters of a 5 per cent sodium chloride solution may be given very slowly by vein to quickly restore the chlorides to normal. They may then be maintained at a normal level by giving physiologic salt solution by vein or by hypodermoclysis. Sodium chloride solution given by proctoclysis is indicated but is less trustworthy and not to be recommended to the exclusion of the two methods mentioned above.

7. Prevention of Starvation: In the treatment of surgical conditions in general, and especially those conditions involving the gastrointestinal tract, an appreciation of the metabolic balance is important. To reduce a patient's food is to reduce his strength. When food cannot be taken by mouth it is necessary that it be given parenterally. The best means known at present is the administration of glucose by vein.

No better method of giving glucose has been devised to date than continuous venoclysis. A rate of 40 to 60 drops per minute seems most suitable. A 10 per cent solution in physiologic sodium chloride solution is practical for routine use. With this solution, it is possible to give more than five liters of glucose in 24 hours, having a caloric value of about 2,000. The daily quantity must, of course, be regulated by the water requirements of the patient. Too much glucose, or glucose too rapidly given, may be excreted by the kidneys and its value lost. At times small, properly controlled doses of insulin may be indicated. Glucose may be given by hypodermoclysis in a 3 per cent solution alone or combined with physiologic salt solution. According to McNealy and Willems⁽⁵⁾, absorption of glucose from the large bowel is very slight and, therefore, of no nutritional value when given by rectum.

After the dehydration and hypochloraemia are under control, a minimum of three liters of solution daily may be given. An accurate liquid chart should be kept and the intake and output carefully noted until convalescence has begun.

8. Maintenance of Bowel Tone: Over-distention of the small intestine and stomach are great dangers in intestinal obstruction. Mechanical emptying of the bowel aids in preventing this condition. Further aid may be obtained by giving morphine and maintaining chloride balance. Morphine increases the gut tone as well as the amplitude of the rhythmic contractions. It is safe to give morphine in repeated doses during the height of the disease if the patient's respirations and color are constantly observed. Hypertonic solutions of sodium chloride increase the gut tone and stimulate peristalsis. While no stimulating action of the gut can be experimentally demonstrated by giving physiologic salt solution, it is reasonable to believe that by maintaining the body salt at a normal level the gut tone may be influenced. Every effort possible should be expended to prevent over-distention of the gut during the critical period when obstruction is being relieved.

9. Drainage of Distended Gut by Enterostomy: The indications for enterostomy in acute intestinal obstruction are not universally understood. Undoubtedly, the operation has been misused. High jejunostomy has been recommended by many as life saving in late intestinal obstruction. There is some doubt if it is any more efficient than the proper use of the duodenal tube for decompression of the stomach and upper intestine. Enterostomy as a preliminary operation may be indicated in well selected cases. It is indicated at times as an adjunct to exploration and release of an obstruction. It is never successful when there exists a paralysis of the gut. If peristalsis is active or can be stimulated, enterostomy will be successful if properly placed. Thoughtful
usually comforting to the patient and can do no
care must be used in selecting the proper patients for enterostomy. An error leading to fatality may be made if enterostomy alone is done for an obstruction due to a strangulated section of the bowel. It is also good advice not to postpone too long an exploration of the obstructed portion of the bowel even though a well functioning enterostomy exists. Perforation at the site of the obstruction may intervene as a result of a local necrosis from pressure.

When an enterostomy is done, the technic of Witzel, using a size 16 or 18 French rubber catheter, is the safest procedure. The catheter should be passed through the omentum and when possible the omentum fixed to the suture line for added protection against infection and adhesions.

10. Application of Heat to Abdomen: Moist or dry heat applied to a distended abdomen is beneficial. Just what action the heat has on the bowel is somewhat problematical. It is generally be-

lieved that it has a direct effect upon the bowel by increasing tone and stimulating peristalsis. Ochsner[4] makes the statement that "as an most valuable one which we possess." Heat is agent to stimulate peristalsis, the application of heat to the abdomen has in our hands been the harm if care is used not to blister the skin.

11. Oxygen Therapy: Oxygen therapy is probably too little used in our serious cases of intestinal obstruction. With abdominal distention and changes in the blood composition, the vital capacity of the lungs and the oxygen carrying capacity of the blood are decreased. The oxygen tent is recommended in such cases, although a true estimate of its value may not yet be definitely established.

12. Bed Posture: A semi-sitting posture in bed is quite desirable to make the patient comfortable, and to increase vital capacity. The frequent turning of the patient is important to minimize congestion of the lung bases.

SUMMARY

It must be quite obvious to all that the type of treatment used and the manner in which it is used must depend upon the diagnosis. A very early diagnosis followed by prompt operation means that much of the treatment outlined above will be unnecessary. In a very late case, all of the treatment outlined and more may be of little avail. In a surgical practice, there are sure to be all types of cases, and to say that any one schedule of treatment applies to all would be folly. Early diagnosis and early operation must be kept uppermost in the surgeon's mind. There is no adjunct treatment that is a substitute for early operative treatment when dealing with acute complete obstruction of the small intestine.

LITERATURE

1. Wangensteen, O. H., Western J. Surg., Gynec. & Obstet., 40:1 Jan. 1932.

2. Owings, J. C.; McIntosh, C. A.; Stone, H. H.; and Weinberg, J. A., Arch. Surg., 17:507, 1928.

3. Morton, J. J., Arch. Surg., 18:1119, 1929.

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5. McNealy, R. W., and Willems, J. D., Arch. Surg., 22:649, April, 1931.

ELECTROCARDIOGRAPHY

MAINE C. ANDERSEN, M. D.,
Omaha, Nebraska.

A REVIEW OF 500 CASES

(From the Department of Medicine at the University of Nebraska Hospital)

Electrocardiographic records have been taken on 500 patients at the University of Nebraska Hospital. There were 648 records taken. The patients were referred for electrocardiographic study from the Hospital wards and the Outpatient Departments either because they showed cardiovascular abnormalities on physical examination, or because their history and symptoms were sufficiently suggestive to warrant a more complete study of their hearts.

500 PATIENTS ON WHOM ELECTROCARDIOGRAMS WERE TAKEN
Chart No. 1

	Total	Arteriosclerosis	Hypertension	Mitral Stenosis	Hyperthyroidism	Syphilitic Aortitis	Aortic Regurgitation	Aortic Stenosis	Acute Rheumatic	Congenital Heart	Miscellaneous	Normal Cases
Number Cases....	500	117	74	69	67	18	17	2	7	2	68	59
Average Age........	44	62	55	30	41	48	43	28	14	21	33	32
Number Deaths..	64	22	15	6	6	2	3	0	0	0	10	0
Average Age at Death................	51	65	52	37	47	52	44	0	0	0	36	0

The cases have been grouped (Chart No. 1.) first, to show the average age at which the patients with different types of heart diseases came for observation, and second, to show the incidence of electrocardiographic findings and the Hospital mortality rate.

ARTERIOSCLEROSIS

The arteriosclerosis group (Chart No. 2.) includes the patients who showed peripheral arteriosclerosis and a normal blood pressure. The possible etiology of the arteriosclerosis, such as sen-

ARTERIOSCLEROSIS GROUP
Chart No. 2

									Inverted T-wave			
	Total	Normal Records	Left Axis Deviation	Auricular Fibrillation	Notched Q-R-S Group	Extrasystoles	Bundle Branch Block	Coronary T-wave	Lead I	Leads I and II	All Leads	Leads II and III
Number Cases	117	1	82	45	49	37	12	20	21	22	13	16
Average Age..........	62	62	62	64	64	64	61	63	60	63	67	63
Number Deaths....	22	0	16	10	10	5	4	11	8	7	0	5
Average Age at Death..................	65	0	62	68	67	72	59	64	62	61	0	71

ility. diabetes, emphysema, chronic nephritis, prostatitis, etc., was not considered. There were 117 patients with arteriosclerosis having an average age of 62 years. The incidence of electrocardiographic findings was:

a. 70% of the arteriosclerotic patients showed a left axis deviation denoting a left ventricular preponderance.

b. 61% had inversion of the T-wave in significant leads with a preponderance of the T-wave inversion in Lead I or Leads I and II. 35% of the patients with T-wave inversion in Lead I or Leads I and II died in the Hospital.

c. 42% showed notching of the Q-R-S complexes.

d. 40% had auricular fibrillation.

e. Twelve patients showed complete bundle branch block.

There were no other cases of complete bundle branch block in the entire series of 500 patients.

f. Twenty patients showed a coronary type of T-wave. 55% of these died in the Hospital. This was the highest Hospital mortality rate in the arteriosclerosis group of patients.

CONCLUSION

The most frequent electrocardiographic finding in the patients with arteriosclerosis was left axis deviation. The most frequent important finding was inversion of the T-wave in significant leads. The highest Hospital mortality rate in patients with arteriosclerosis was in the group showing a typical coronary T-wave.

HYPERTENSION

The hypertension group (Chart No. 3.) includes all the patients who had abnormally high blood pressure regardless of the etiology. If the patient, for instance, had hypertension and arteriosclerosis he was included in the hypertension group and not in the arteriosclerosis group. There were 74 patients with hypertension. Their average age was 55 years, which was 7 years younger than that of the arteriosclerosis patients. The incidence of electrocardiographic findings was:

HYPERTENSION GROUP
Chart No. 3

								Inverted T-wave			
	Total	Normal Records	Left Axis Deviation	Auricular Fibrillation	Notched Q-R-S Group	Extrasystoles	Coronary T-wave	Lead I	Leads I and II	All Leads	Leads II and III
Number Cases	74	3	59	12	25	12	20	14	18	5	4
Average Age	55	52	56	60	57	62	52	56	56	56	61
Number Deaths	15	0	14	2	6	2	10	4	10	0	0
Average Age at Death	52	0	53	52	51	48	56	55	58	0	0

a. 80% showed left axis deviation. This was 10% above the arteriosclerosis group.

b. 55% had inversion of the T-wave in significant leads with a marked preponderance of the T-wave inversion in Lead I or Leads I and II. Of the 18 patients showing T-wave inversion in Leads I and II, 55% died in the hospital. This was the highest hospital mortality rate in the hypertension group of patients.

c. 34% showed notched Q-R-S complexes.

d. 16% had auricular fibrillation as compared to 40% in the arteriosclerosis group.

e. Twenty patients showed a coronary type of T-wave. Of these, 50% died in the hospital.

CONCLUSION

The most frequent electrocardiographic finding in patients with hypertension was left axis deviation. The most frequent important finding was an inversion of the T-wave in Lead I and Leads I and II. The highest hospital mortality rate in patients with hypertension was in the group showing inversion of the T-wave in Leads I and II.

MITRAL STENOSIS

The mitral stenosis group (Chart No. 4.) includes the patients who showed unmistakable physical findings of a stenosed mitral valve.

MITRAL STENOSIS GROUP
Chart No. 4

								Inverted T-wave			
	Total	Normal Records	Left Axis Deviation	Right Axis Deviation	Notched P-wave	Extrasystoles	Auricular Fibrillation	Lead I	Leads I and II	All Leads	Leads II and III
Number Cases	69	11	16	18	26	11	16	3	7	6	9
Average Age	30	24	40	27	29	41	41	37	39	46	37
Number Deaths	6	0	1	3	2	3	3	0	2	0	3
Average Age at Death	37	0	31	36	27	44	44	0	45	0	36

There were 69 patients with mitral stenosis having an average age of 30 years. The incidence of electrocardiographic findings was:

a. 18 patients showed right axis deviation and 16 patients showed left axis deviation. The average age of the former was 27 years and that of the latter was 40 years. The difference in the age incidence of right and left axis deviation in patients with mitral stenosis corresponds with the clinical and pathological sequence of events, that is, early right ventricular hypertrophy with later left ventricular hypertrophy, dilatation, and myocardial failure.

b. 37% showed an abnormally large or notched P-wave.

c. 37% had inversion of the T-wave in significant leads with a preponderance of the T-wave inversion in Leads II and III in contrast to the hypertension and arteriosclerosis groups where the T-wave inversion occurred more often in Leads I and II. Five of the six patients who died in the hospital with mitral stenosis had inversion of the T-wave in significant leads.

d. 26% had auricular fibrillation.

CONCLUSION

The most frequent electrocardiographic finding in patients with mitral stenosis was an abnormally high or notched P-wave. The most frequent important finding was inversion of the T-wave in significant leads. The highest Hospital mortality rate in patients with mitral stenosis was in the group showing T-wave inversion in significant leads.

HYPERTHYROIDISM

The hyperthyroidism group (Chart No. 5.) includes the patients who had exophthalmic or adenomatous goitre with signs or symptoms of toxicity and a basal metabolic rate of over plus 20. There were 67 patients in this group having an average age of 41 years. The incidence of electrocardiographic findings was:

HYPERTHYROIDISM GROUP
Chart No. 5

									Inverted T-wave			
	Total	Normal Records	Left Axis Deviation	Right Axis Deviation	Auricular Fibrillation	Notched Q-R-S Group	Extrasystoles	Tachycardia	Lead I	Leads I and II	All Leads	Leads II and III
Number Cases	67	23	21	4	15	7	10	15	4	2	2	10
Average Age	41	35	52	48	50	50	47	35	50	60	56	45
Number Deaths	6	0	3	1	3	1	0	2	0	0	0	3
Average Age at Death	47	0	53	39	54	39	0	35	0	0	0	40

a. 34% had normal electrocardiograms.

b. 31% had records showing left axis deviation while only four patients had records showing right axis deviation.

c. 27% had inversion of the T-wave in significant leads.

d. 22% had auricular fibrillation.

CONCLUSION

The most frequent electrocardiographic finding in patients with hyperthyroidism was left axis deviation. The most frequent important finding was inversion of the T-wave in significant leads. Six hyperthyroid patients died in the hospital. All six showed significant electrocardiographic changes but the changes were not uniform and it was impossible to correlate the incidence of specific electrocardiographic findings with the Hospital mortality in this group of patients.

SYPHILITIC AORTITIS

The syphilitic aortitis group includes the patients who had a positive blood Wassermann and symptoms of aortitis but without demonstrable aortic regurgitation. There were 18 patients with syphilitic aortitis having an average age of 48 years. The incidence of electrocardiographic findings was:

a. Five of the patients in the group had normal electrocardiograms.

b. Ten patients had records showing left axis deviation.

(c) Nine patients had records showing inversion of the T-wave in significant leads. In seven of these the T-wave inversion was in Leads I or Leads I and II.

CONCLUSION

The most frequent electrocardiographic finding in patients with syphilitic aortitis was left axis deviation. The most frequent important finding was inversion of the T-wave in Lead I and Leads I and II. Two patients with syphilitic aortitis died in the Hospital. One of these had a normal electrocardiogram while the other showed a notching of the Q-R-S complexes with a coronary type of T-wave in Lead I.

AORTIC REGURGITATION

The aortic regurgitation group includes all the patients who had unmistakable signs of aortic regurgitation regardless of etiology. There were 17 patients in this group having an average age of 43 years. The incidence of electrocardiographic findings was:

a. 9 of the 17 patients showed left axis deviation.

b. 7 patients showed inversion of the T-wave in significant leads. The T-wave inversion was entirely limited to Lead I or Leads I and II.

c. 8 patients had a notching of their Q-R-S complexes.

d. 8 patients had records showing the typical type of coronary T-wave.

CONCLUSION

The most frequent electrocardiographic finding in patients with aortic regurgitation was left axis deviation. The most frequent important finding was a notching of the Q-R-S complexes and a coronary T-wave. Three patients with aortic regurgitation died in the Hospital. All three had records showing a notching of the Q-R-S complexes in significant leads associated with an inversion of the T-wave in Leads I and II.

There were two patients with aortic stenosis. Their electrocardiographic records showed only a marked left axis deviation. Two patients had congenital heart disease and their records also showed only a marked left axis deviation. Seven patients had active acute rheumatic fever and without demonstrable signs of cardiac involvement. Their electrocardiographic records were normal.

The miscellaneous group includes the patients who had pneumonia, cancer, asthma, anaemia, gall-bladder disease, obesity, etc., on whom electrocardiographic records were taken. There were 68 patients in this group having an average age of 33 years. Ten patients from this group died in the Hospital. Four of these had normal electrocardiograms while the remaining six had records showing significant changes.

The normal group includes the patients who were sent for electrocardiographic study but were considered physically normal. There were 59 cases in this group with an average age of 32 years. Four of these showed left axis deviation and one showed a right axis deviation. Four had extrasystoles of ventricular origin and three had auricular premature beats. There was one case of auricular paroxysmal tachycardia and another with ventricular paroxysmal tachycardia. Both of these individuals were considered normal except for the tachycardia. The remaining cases showed essentially normal electrocardiographic records.

VENTRICULAR EXTRASYSTOLES

78 patients had records showing ventricular extrasystoles. In 40 of these the abnormal beats had their origin in the left ventricle while in the remaining 38 the origin was in the right ventricle. The ventricular extrasystoles took their origin equally often from the right or the left side of the heart in a given type of heart disease. Ten of the patients with extrasystoles of left ventricular origin died in the Hospital while only two, where the origin was in the right ventricle, died in the Hospital. Nine of the twelve patients with ventricular extrasystoles who died in the Hospital also had auricular fibrillation. Ventricular extrasystoles occurred most often in the arteriosclerosis group of patients.

AURICULAR PREMATURE BEATS

Auricular premature beats were found 15 times. They occurred most often in the arteriosclerosis group of patients. In three instances the electrocardiograms were otherwise entirely normal. One patient having auricular premature beats died in the Hospital. This patient died from a sarcoma.

AURICULAR FIBRILLATION

Auricular fibrillation accurred 95 times or in 19% of the entire series of cases. The average age was 56 years. It occurred most often in the arteriosclerosis group of patients. 51% of the patients with auricular fibrillation also showed left axis deviation. One third of the patients with auricular fibrillation had accompanying ventricular extrasystoles. Of the 19 patients with auricular fibrillation who died in the Hospital, 15 also showed inversion of the T-wave in significant leads.

LEFT AXIS DEVIATION

Left axis deviation occurred 219 times. The average age was 54 years. It occurred most often in the hypertension group of patients. Left axis deviation occurred only four times in the 59 cases who were otherwise considered normal.

RIGHT AXIS DEVIATION

Right axis deviation occurred 28 times. The average age was 37 years which was 17 years younger than that of the left axis deviation group of patients. It occurred most often in the patients having mitral stenosis. Right axis deviation occurred only once in the group of cases who were otherwise considered normal.

T-WAVE INVERSION IN LEAD I ONLY

Inversion of the T-wave in Lead I only, occurred equally often in the arteriosclerosis group and the hypertension group of patients. 12 of the 46 patients showing this electrocardiographic abnormality, died in the Hospital. 35% of the arteriosclerosis patients showing inversion of the T-wave in Lead I only, died in the hospital.

T-WAVE INVERSION IN LEADS I AND II

Inversion of the T-wave in Leads I and II occurred 58 times. The average age was 55 years. It occurred most often in the hypertension group of patients. 10 of the 18 patients with hypertension and showing an inversion of the T-wave in Leads I and II, died in the hospital. 38% of the entire group of patients showing this electrocardiographic abnormality died in the Hospital.

T-WAVE INVERSION IN LEADS I, II AND III

Inversion of the T-wave in all three leads occurred 29 times. The average age was 58 years. It occurred most often in the group of patients with arteriosclerosis. Only one patient whose record showed inversion of the T-wave in all three leads, died in the Hospital. This patient had aortic regurgitation.

T-WAVE INVERSION IN LEADS II AND III

Inversion of the T-wave in Leads II and III occurred 42 times. The average age was 50 years. It occurred most often in the group of patients with hyperthyroidism. 31% of the entire group of patients showing this electrocardiographic abnormality died in the Hospital.

NOTCHED Q-R-S COMPLEXES

107 patients had records showing a notching of the Q-R-S complexes. The average age was 56 years. It occurred most often in the group of patients with aortic regurgitation. 60% of the cases with a notching of their Q-R-S complexes also had an inversion of the T-wave in

significant leads. 7 patients showing a notching of the QR-S complexes also had a partial or complete heart block. Of these 7 patients, 5 died in the Hospital. Of the 26 patients whose records showed a notching of the Q-R-S complexes and who died in the Hospital, 23 also showed an inversion of the T-wave in significant leads. This was the highest Hospital mortality rate in the entire series of 500 cases.

LOW VOLTAGE

Low amplitude of the main deflections in all three leads occurred 17 times. The average age was 54 years. It occurred most often in the arteriosclerosis group of patients. 65% of the patients showing low voltage also had auricular fibrillation. One third of the patients with electrocardiograms of low voltage died in the Hospital.

COMPLETE BUNDLE BRANCH BLOCK

12 patients had records showing a typical complete bundle branch block. The average age was 61 years. All the patients with this abnormality belonged to the arteriosclerosis group. Eleven of the records showed the block to be of the left bundle branch type. 5 of the 12 patients also had auricular fibrillation. Four patients with complete bundle branch block died in the Hospital.

COMPLETE AURICULO-VENTRICULAR BLOCK

Six patients showed complete heart block. The average age was 64 years. Five of the six patients had arteriosclerosis while the other had hypertension. All six patients also showed an inversion of the T-wave in significant leads. Three patients with complete heart block died in the Hospital.

PARTIAL AURICULO-VENTRICULAR BLOCK

Partial auriculo-ventricular block occurred 13 times. The average age was 48 years. Five patients with arteriosclerosis showed partial auriculo-ventricular block and all five at some time had also shown complete heart block. Five patients showing partial auriculo-ventricular block died in the Hospital. Three of these had also shown complete heart block. Of the remaining two, one had mitral stenosis while the other had aortic regurgitation.

LARGE Q-WAVE IN LEAD III

A large Q-wave in Lead III occurred 9 times. Six of the patients showing this abnormality belonged to the arteriosclerosis group and their records showed other significant electrocardiographic abnormalities. Two of these died in the Hospital. The remaining three patients had entirely normal records except for the left axis deviation and the large Q-wave in Lead III. One had hypertension, one had syphilitic aortitis. and the other had diabetes. None of these died in the Hospital.

CONCLUSION

A complete analysis has been made of the electrocardiographic records taken on 500 patients at the University of Nebraska Hospital.

The most frequent electrocardiographic finding was left axis deviation. 44% of the entire group of patients showed left axis deviation.

The most frequent important electrocardiographic finding was inversion of the T-wave in significant leads. 35% of the entire group showed an inversion of the T-wave in significant leads.

The highest Hospital mortality rate was found in the group of patients whose electrocardiographic records showed a notching of the Q-R-S complexes accompanied by an inversion of the T-wave in significant leads.

THE PRACTICAL SIDE OF MEDICINE*

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Due to the existing conditions in the practice of medicine I decided that I would try to call your attention, briefly, to some of the different phases or aspects of medicine in its every day application to the general public.

There are many different phases to the practice of medicine, but, for convenience sake, let us assume for a while, a scientific side and a practical side; or, a side in which the physician is deeply intrested, and a side in which the public is deeply interested. To be sure, the doctor should be equally interested in all the various sides of medicine but I am afraid such is not always the case.

As to the scientific side of the practice of medicine I shall have little to say except that, in my judgment, the young doctor starting out to practice medicine, fresh from a medical college and a year in a hospital as an interne, is so over educated from the scientific side and so under educated from the practical side, that he might almost be termed "lop-sided."

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*Read at the banquet of the Seventh Councilor District Medical Society, Superior, October 27, 1932.

I believe that our medical colleges could materially improve their curriculum by installing a chair of Medical Economics and teach their graduates something about the social, economic, and practical sides of the profession which is to be their life work.

About the practical application of a medical education there is so much that might be said and so little time in which to say it that I can only hope to call your attention to a few of the more outstanding features of the question.

First of all, I believe it to be the duty of every young physician entering upon the practice of medicine to align himself with his local county society and after having done so to take an active part in its proceedings.

With state and contract medicine staring us in the face, the only way in which the public can be effectively reached and educated as to what is really for the best interests of the public, is through the individual members of your medical society.

The State and National medical organizations can direct, but the point of actual contact with the public, is through the common, every-day doctor, and any movement that is to relieve the situation must be carried out by the individual members of the county societies.

Of course, there are certain individuals in the profession who never go to a medical meeting, and never take any part in any medical society activities. Such men may well be termed drones in the hive of medicine and, as a rule, are not deserving of our consideration.

A man who centers himself in his own affairs alone soon becomes so stale that he is neither a good scientific practitioner nor is he a good dependable practical man. He is shifting the responsibilities, which he should help to bear, to other shoulders and is ignoring the demands which an economic era is making upon the profession.

I fear, also, that there are too many luke-warm members in most of our societies; they go to meetings occasionally but take little or no active part in any of its proceedings, in fact, they often don't know what it is all about.

Perhaps there is room for some blame on the part of the State Association in that it hasn't been as active as it might have been in perfecting a stronger, closer, and better means of organization for the various county units of which it is composed.

After all, the state organization is composed entirely of the various county organizations and it can be no stronger than its weakest link.

There is a movement on foot at the present time in the state organization to have a full time secretary who will also be a business manager for the State Association, and will be supposed to devote a part of his time to perfection of a closer and better organization of the county units.

I would suggest that you have at least one paper at every meeting dealing with medical economics, or, the relationship of the medical profession with the public. As the matter now stands, I think we are mighty well prepared scientifically to practice medicine, but we are "Babes in the Woods" from an economic standpoint.

Let us remember that the public is not much concerned about scientific medicine, but it is intensely interested about the economic application of that science; therefore, it is the duty of every practitioner of medicine to make a study of that phase of his practice and begin to educate the public to a realization of just how much the application of that science means to the public.

Let me quote Dr. L. O. Frech, of Decatur, Ill., in the September issue of the *Illinois State Medical Journal*:

"The scope of private practice is individual, narrow, short-sighted, and greedy. The designs of the profession are broad, far-reaching, liberal and affect the group.

"The public's solution of medicine's economic problems is based upon interpretations arrived at, and conditions drawn through, the medium of the lay mind, and consequently, is a solution of *low costs* rather than *high quality service*.

"A solution of medicine's problems based upon *low cost* and a declining standard of service is *not* one to be readily accepted by the medical profession for the reason that medicine's *first* and foremost duty to the public's welfare is a *highly qualified service* and *such* a service is not commensurate with *low cost*."

I believe that we are agreed that if the present high standards of medicine are to be maintained, then it must be kept out of the hands of lay control—viz., politics.

If the public can be made to realize this truth through a proper education by the medical profession, I hope we may be spared the ignominy of lay control. But, unless we get busy and start educating the public of this peril, I fear that the public may "kill the goose that lays the golden eggs."

And, to the end that we may become competent to educate the public concerning the perils and pit-falls of a lay controlled medicine, I believe it is high time that we educate ourselves regarding this phase of the practical application of scientific medicine.

The Woman's Auxiliary, it seems to me, could be used to good advantage, through their contact with the public by way of Woman's Clubs, church work and other activities, to aid in a campaign of education of the public to the perils which will surely follow lay interference with medical affairs. I really believe that, if the public were fully alive to the perils of lay controlled medicine, that same public would not approve of such a regimen.

Of this much I am sure: If the public is to continue receiving the same high grade of medical care that it now receives, it must be made aware of the fact that it will have to keep its hands off things that are medical.

I feel that there is already too much dabbling in medical affairs by way of health programs and various and divers lay health organizations.

The medical profession, more than any other, is expected to do, expects to do, and does do, a great deal of charity work. In normal times it amounts to about one-third of all the medical practice of the U. S. During the present times it is vastly much more than this.

I believe that it is time that the public should be educated to the fact that it owes medicine a great debt and that medicine is rendering to the public all or more than it owes the public.

The first great debt the public owes the profession of medicine, and its own best interests, is to keep its hands off medical affairs and let the profession attend to such things.

Surely, the profession of medicine, as a whole, can be trusted to do whatever is for the best interests of the people, as a whole, and it is certainly just as sure that the public cannot be trusted to do what is for its best interests for the same reason that a child cannot always be trusted to do what is for its best interest, simply because it does not understand.

Again I say, the only way the profession can expect to be able to make the public see and understand these things is to first educate itself concerning these questions.

Please pardon me if I repeat that I believe it would be to the best advantage of every county medical society to have at least one paper at each meeting pertaining to medical economics and the relationship of the medical profession to the public. Become so familiar with this phase of the practice of medicine that you will be able to discuss it freely with your patients and show them the reason why the laity should not attempt to regulate medical affairs.

There can be no doubt that the existing conditions, as we have them today, between the medical profession and the laity, are the logical result of the relationship which has existed between the two parties, and the medical profession is directly responsible, and any change for the better must come through the initiative of the profession.

I say, therefore, that in my opinion, it is time that the profession of medicine awakens to the fact that it is entitled to an equal amount of consideration, pecuniary and otherwise, with any other profession that renders an equal service to the public as a whole.

You may rest assured that so long as medical men, tacitly, or otherwise, encourage the present trend, just so long will serious inroads be made upon the practice of medicine.

GOD AND THE DOCTOR

We have a Holy Roller colony to the north of us. Dame rumor had informed us that brother S. was doing badly and suffering a great deal. The preachers had been praying and exhorting him to be firm in the faith without relief.

A daughter who lived in Iowa was called home. Not being imbued with the true faith she called over the phone and requested that we come and see the old man.

A few inquiries decided us to take along a Bard-Parker as the patient could not lie on his back or sit on a chair.

While parking the Ford we could hear the groans of the suffering one. We were shown into the room by the daughter and found the old man lying on his abdomen. Pulling back the bedclothing disclosed an abcess, the size of a pint measure next to the anus. We asked for a few clean towels, sterilized the B. P. Swish! "God, what a relief!" Whereupon one faithful old brother remarked, "The Lord can work mighty miracles assisted by Dr. —'s knife."—John Buis.

THE DIFFERENTIAL WHITE BLOOD CELL COUNT*

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PART II

Arenth was the first to study the changes in the polymorphonuclear cells in patients suffering from infectious processes. He pointed out that there were significant variations in the nuclei of polymorphs according to their age, which indicated with some precision the degree of toxemia of the infection. His scheme divided the polymorphonuclear leucocytes according to their nuclear configuration and lobation into five classes with three to six subdivisions under each major partition group. He considered lobation as a positive criterion of age, and noted that in those patients suffering from an infection that there was an increase in the number of cells having the more simplified nuclei over those that had multilobed nuclei. He designated this change in nuclear partition as a "shift to the left," and further concluded that it indicated a toxic, or an infectious process, the severity of which was in direct relation to the intensity of the shift. Three major objections were raised by Cooke(12): First, it was too complex and was both indefinite and increasingly detailed. Secondly, it would require too many observations to establish its value in a given condition. And, lastly, the personal factor rendered it valueless as a means of making any comparative study. As a result, it was never used to any great extent.

Because of this ambiguity in the Arneth Count, Cooke(12) in 1914 devised a somewhat similar method which was more practical. He has termed it the polynuclear count. He laid down the following rules for classifying the various cells: In class I, are placed all the cells whose nuclei are undivided; class II, the cell with two lobes; class III, the cell with three lobes, and so on to class V. Lobes of polymorphonuclear cells are always connected by chromatin material, and to do away with all chance of misunderstanding the use of the method he gives the following guide: "If there is any band of nuclear material except this chromatin filament connecting the different parts of a nucleus, that nucleus cannot, for the purpose of the count, be said to be divided." This clarifies his method quite remarkably, because of his comprehensive definition of a lobe, which was lacking in the method of Arneth.

In order to determine a "normal" count, Cooke(12) studied the blood of ninety individuals of both sexes between the ages of twelve and fifty-five, who were in apparent good health. The average of these counts is:

I.	II.	III.	IV.	V.
10	25	47	16	2

The limits of normal, he placed within numbers twenty and forty. An increase in the number of cells in the first two classes beyond forty was considered as a "drift" to the left and if there were less than twenty in these two cell groups it would be looked upon as a "drift" to the right.

This method of polynuclear determination has been extensively used by Cooke and Ponder(12) both as an aid in diagnosis and as a criterion of cure and progress. Their conclusion may be stated briefly as follows: "The improbable case has an increasing 'left handed' drift; the hopeful, a count that shows progressive diminution of cells in classes I and II." They state that a single count cannot be of great help in prognosis beyond the fact that it is an index of the severity of the infection. They further add that in estimating the results of treatment the count is invaluable, and the time has come when it should be used as the criterion of cure. By way of conclusion, they wanted to leave the impression that the polynuclear count must not be used to replace any other method. It is something that helps to complete the picture of the disease, and is a pointer to the way the case is progressing.

Their work is rather interesting and convincing. However, it has not been tried by others sufficiently to be accepted in its entirety. But on the other hand it is an outstanding contribution to hematology and has become the basis for many other studies in differential counting.

Farley, et al(13), accepted the assumption of Arneth, Cooke and Ponder, Schilling, Piney, Pons and Krumbhaar, that the differential estimation of the variations in the nuclear appearance of the neutrophils is a more delicate gauge of infection than the ordinary total and differential count. The various other methods of differential counting seemed to them to be too complex for general popular usage, and they attempted a simplification of one of these methods, namely that of Cooke and Ponder. They accepted the criterion of Cooke for dividing into two specific groups, which they elected to call "nonfilament neutrophils" and "filament neutrophils," the first group to include the cells in the Class I of Cooke and Ponder, and the second group to include groups II, III, IV, and V. They further have adopted the differentiation of a hundred consecutive leucocytes to determine the total percentage of cellular elements as the basis of this count. In one hundred selected apparently normal individuals they found the average non-filament count to be 9.2 cells, and by percentage computation of the normal counts of Cooke and Ponder they found the average count of these two groups was approximately 8 per cent. However, on the basis of their work they believed that for practical purposes 16 per cent should be considered as the upper limit of non-filament neutrophils in health. By way of repetition, if 100 neutrophils are counted not more than 25 per cent should be non-filamented; while if 100 white cells are counted not over 16 per cent of the neutrophils should be non-filamented.

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*Read before the Omaha-Douglas County Medical Society, October 25, and before Lancaster County Medical Society, November 1, 1932.

They believe that this method is valuable in studying the reaction of the bone marrow in infections of all types and more especially in diagnosing cryptic infections of subacute or chronic types. They feel that its value in prognosis has not been fully established as yet. This classification is particularly descriptive in its terminology, and is commended to general usage by its simplicity. This count has been recommended by Haden(14), who is of the opinion that it can be used to a greater advantage by a greater number than some other more complicated method.

Schilling(14)(19) has devised a hemogram based on histologic change in the cells, and has proven by clinical trial that certain changes in the hemogram have great clinical significance. He looks upon the various blood cell groups as parts of a biologic chain, and states that this inter-relationship is affected in a rather definite manner by infectious processes. He contends that most every infectious disease is characterized by three stages—invasion and inflammatory struggle, crisis, and finally a convalescent and curative stage.

The subdivisions that he recommends for the neutrophils are myeloblasts, promyelocytes, myelocytes, juvenile cells, stab or rod or band nuclears, and segment nuclears. The myeloblasts and promyelocytes will be useful in leukemic blood pictures only, and in the ordinary hemogram are not tabulated.

The lymphocytes of all types are considered under a single heading. As yet the subdividing of the lymphocytes according to their supposed age has been of no great clinical importance.

Basophils	Eosinophils	Myelocytes	Juveniles
B.	E.	M.	J.
1.0	2-4	0	0
0.5	3		

Stabs	Segmented	Lymphocytes	Monocytes
St.	S.	L.	M.
3-5	56-66	21-35	4-8
4	63	23	6

The above constitutes the practical hemogram of Schilling and the respective percentages of the cells under normal conditions.

Now if a line is drawn between the segment nuclears and the lymphocytes an increase in the number of cells to the left is considered a shift to the left, and the reverse as a shift to the right. In the strict sense of the word, shift to the right and left is concerned only with the neutrophilic granulocytes. So a shift to the left means an increase in the percentage of young forms, and as this shift deepens the pathological forms of Juvenile and myelocyte cells will make their appearance. Hence the line of partition between right and left shift lies between the stab forms and the segment nuclear forms. The presence of myelocytes is looked upon as an intense reaction. An appreciation of the normal and abnormal percentages of the various cell types is, after all, more important than whether or not the shift is right or left. In this way the quantitative relationship of all the cells is maintained, which experience has shown to be of clinical value. Strictly speaking, a shift to the right indicates an increase in the number of the segmented cells, which is usually associated with hypersegmentation as well.

Schilling(1) divided nuclear shift of the neutrophils into two primary classes; namely, the regenerative and the degenerative nuclear shift. The former is characterized by a relative and absolute increase in the number of neutrophils. This increase is concerned with the segment nuclear and stab forms plus the appearance of the juvenile cell, and in some cases myelocytes. Such a type of reaction represents increased regenerative activity of the bone marrow. This irritative sign of activity is an acceptable guide of the toxemia of septic processes. On the other hand the degenerative shift shows the normal segment nuclears and stab cells often in high percentages, but no young forms. There are usually signs of cellular degeneration which are striking in the stab cells. This type of shift is characterized by a degenerative type of "stab" form. The total cell count is low if there is not a high grade lymphocytosis. This type of shift is typical in typhoid fever. Schilling considers this reaction as an expression of defective bone marrow function, and that it is a true inhibition of the blood forming organ. Naegeli holds a similar belief. In many cases there will be a mixed type of differential count. This type of blood picture is not well understood, and its indication for use cannot be clearly given.

Now then, to consider Schilling's hemogram further, we must recall his conception of disease phases being paralleled by characteristic blood changes. The first phase he calls the neutrophilic struggle stage. It is characterized as follows:

1. Neutrophilia.
2. Sharp shift to the left.
3. Relative decrease of monocytes and lymphocytes
4. Disappearance of eosinophils.

The crisis, or monocytic defense state, is as follows:

1. Monocytes increase—absolute increase.
2. Left shift recedes.
3. Neutrophilia decreases.
5. Lymphocytes continue to be low.
4. Reappearance of eosinophils.

It must be understood that this phase indicates a transition, and hence, may mean a change for the worse as well as for improvement.

The convalescent, or the phase of lymphocytes cure, is characterized by:

1. Increase of lymphocytes—absolute increase.
2. Normal neutrophils.
3. Normal of increased eosinophil count.
4. Monocytes are normal.

Schilling believes that these rules can be applied to most infectious diseases and will form the basis for the proper understanding of the diseased state. He does not believe that the method is infallible; however, he contentds that if the reaction assumes a course other than what is expected hematologically it is not the blood that fails but rather our insufficient knowledge of the cause of these phenomena that produce the change.

By way of conclusion, brief mention will only be made of the importance of signs of degeneration in white blood cells as a valuable guide in estimating the degree of toxemia. Many hematologists consider these signs more important than evidence of nuclear transformations.

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SOME RESPONSIBILITIES OF THE GENERAL PRACTITIONER IN THE CARE OF MENTAL PATIENTS*

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We do not presume to know the general practitioner's business as well as he does, but from our patients and their relatives (who are ever with us), we have learned how little they know about this hospital. We do not deal with merely abstruse psychoses; our work has to do with very human relations.

"The sum of the matter is that in the management of a mental case the patient himself is only a part of the problem. Sometimes, in fact, the least difficult part. The family and domestic phase make up the other part and when, as is only too often the case in addition to the circumstances already referred to, which result in various foreign or artificial symptoms, we find a definite psychopathic milieu in the specific sense, within which the patient has been living under the burden of hereditary influences or in the midst of mutually reactive morbid familial syndromes, the almost indefinitely widening scope of restorative or ameliorating indications become still more apparent.

In the social commonwealth no individual is an isolated or independent creature. Each is in some manner an expression of the times. Nor is the mental patient an isolated phenomenon within the more restricted confines of the family—a tare sown by chance in a garden where otherwise only roses bloom. He presents merely an individual type of growth from a common matrix and any efforts to remedy this condition must reach far enough to include the milieu as well. A recovered manic-depressive patient, with insight, once pertinently remarked: "Could you doctors live for a while in the families whence later come your patients, you would better understand their illness and its cause and know more readily what to do for them."

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*Read before the meeting of the Madison Six County Medical Society, Norfolk State Hospital, March 21, 1953.

The above appropriate thought is quoted by Dr. Clarence D. Farrar, Associate in Psychiatry in Johns-Hopkins, in the first edition of Jelliffe and White's text-book on Nervous and Mental Diseases, published twenty years ago. We quote it here to emphasize the fact that even though our methods and technics may vary, and we hope improve, the underlying structures or causes are still the same. We wish to expand on this phase and others that have much to do toward the ultimate outcome for our patient and his happiness.

The relation, both to his family and to his society, should compel the interest of the family physician if his patient is to be made well and re-established in an environment where he can expect to remain well. When it becomes necessary for a family or county physician to sign the paper that commits his charge to the State hospital for further care, their insight into, and their knowledge of special pertinent facts would help the authorities here or elsewhere, in further treating this patient.

Now, on the other hand, there are certain fundamentals about this hospital that the physician should know so he could convey the true situation to the family and to the patient, if needs be, in contemplating possible commitment. The facilities, the equipment, the physical make-up at the institution, are not well known to the profession as a whole. This is anything but a closed corporation and we really do think the correct situation should be more widely known. There are many doctors who have never been through this, or any similar institution. It is not our prerogative to advertise in the ordinary sense of that word, but it is our desire to make known in a semi-professional way, the facilities we do have to offer for the care of nervous and mental diseases.

A. Many of you may be aware that we have now open, and functioning, a new Psychiatric hospital building, which provides more adequately for acute medical and surgical cases, and which at the same time increases our space for receiving new patients. This building in itself, is very evident to anyone who will come out to the hospital grounds, but its functioning is not clear unless one is willing to make the effort to come in and inquire or to go around under proper guidance to see the various wards.

B. There is quite a staff of doctors, graduate nurses, and attendants, as best allowed within the limits of our maintenance fund. At that, we are under-staffed for the best treatment of the patients, but we are considerably better off than many other institutions of this type.

C. Various new features in treatment are adopted wherever practical. For example:

1. The Occupational Therapy department, in vogue here now more than a year, provides an immediate source of occupation and diversion to many of the acute and new arrivals, as well as to a number of the older patients. At this time there are about one hundred different individuals benefiting by this department.

2. Musical or melo-therapy is another new attraction we have undertaken. This includes orchestras of the regular and rhythmic types, supervision of special dances provided for the patients, group and individual singing as well as piano instructions.

3. In addition, there are pianos on many of the wards and radio speakers on most of them. These latter are controlled by a central receiver and all, therefore, having similar programs at the same time.

4. Talking movies are provided weekly and dramatic skits on occasion.

D. Medical, surgical, dental or specific treatments are provided as indicated and as promptly as possible.

E. Plenty of out-door activities for as large a number as may be possibly permitted, are available in season.

F. A liberal parole system, both of the grounds and of a more permanent sort, has been effective in the last few years.

G. A tendency due to this latter is an increased turnover of population, including more discharges and more recoveries. The relative number of paroles and discharges is about forty per cent.

The importance of knowledge of these same facts to the families of future patients cannot be overlooked. For example:

Just this month the son of a new female patient comes here for the first time, full of apprehension as to what an "Insane Asylum" can do for his mother. He has an erroneous idea that there is only one large building here and that it must needs be terribly crowded. Because the whole family misunderstood, the patient too, depressed a-plenty to start with, was brought in with great anxiety and was certain no good could possibly come of her stay here. (This attitude in itself sets up an opposition against whatever treatment is instigated.) When this young man learned that there have been a number of large buildings functioning years before he was born, and then comes here now to be literally astounded by the impressive group of structures serving as a State Hospital, and not just an "asylum", he must of necessity go home disillusioned and we hope favorably impressed with what is being done for his mother.

Another interesting, and slightly different, angle of the same story is the case of a mother, her daughter and a social service worker, who must needs come here for a preliminary survey first before the daughter submitted to commitment willingly and was thence brought here as a "house guest".

This brings us down to another interesting question, and that is the various methods for the admission of patients. The official technique varies in different states. (1) Many states use the "trial by jury" method. This plan may be used to facilitate discharge as well as admission. (2) Many states use the services of a county insanity commission. Such a scheme is most common in Nebraska. By this plan, when a person is presented, or when the facts of the case are brought to the attention of the commission by witnesses, some of whom are usually the close relatives, and then when the evidence and the examination of the patient is completed and sworn to by the physician on the county board, the warrant for admission to this hospital is completed by the clerk of the district court and the patient and warrant then transmitted to the hospital by the sheriff or his deputy. (3) Again in some states it suffices to have the sworn statements of two reputable and registered physicians. (4) Then there is the voluntary commitment, whereby an individual may apply for and gain an examination and observation for a more or less limited period of time, (periods usually are from two to ten days), when said person has not deliberately caused action along any of the other lines above mentioned, and is not as yet an outright asocial or demented character.

Still another bit of information is the relative cost and care in a state hospital as compared with a private sanitarium. Or, we might add, even as compared with adequate private care at home. The monthly charge which includes board, room, laundry and medical and nursing care at this hospital is only $16.10. It is impossible to conceive of a sanitarium or any private arrangement that could even care for this same patient adequately for one week at this price. The actual facts of cost of a more private nature are otherwise immaterial to this argument. If private nursing care was provided at home, as is sometimes necessary and should be for the comfort of the patient, the cost of nursing alone would be far above this figure.

On the same point of discussion, we would like to emphasize another angle that becomes often evident, and that is that the patient and the family unwittingly go on with a certain type of private treatment or even inadequate care, until all of their resources and often their patience is exhausted. Then, when they are indigent and often times almost paupers, their last and only resort is state or county care. In that extremity they come here usually with the nerves of the whole family "frayed out" as well as the pocketbook. We believe at this time that the newer ideas and facilities for psychiatric care in such a hospital as this are sufficiently adequate to care for the acute needs and the early demands of nervous and mental patients, and should not be relegated to the background to be used only as a final resort, in which case, very often, results are much less favorable.

Some of the features we do not have as yet, in this state hospital would stand mention, just in passing.

A. We have no special epileptic colony.

B. We have no separate criminal insane wards.

C. No special tuberculosis and no contagious wards.

D. Actually we have no violent wards, although we are repeatedly questioned by visitors, even including legislators, to show them "this dread place", or "those violent patients." As a matter of fact, really violent patients, the so-called "maniac" type, have been on a steady decline for several decades, in fact since Pinel in France first "dared to release these demons from their chains." (Some of the methods used for sedation, in lieu of "cruel restraint", you have heard in another talk this evening; other methods used for diversion and distractions we have already mentioned in this article.)

Still another phase in which Nebraska is sluggish in taking up responsibility is in mental hygiene clinics, out-patient service and preventive therapy. On this matter of out-patient care, our superintendent advances a scheme worthy of very serious consideration. At this time two of our three state hospitals are full to capacity and overcrowded. Actually, this institution is full beyond its capacity, although, theoretically, we are supposed to have plenty of room for new admissions since our new psychiatric hospital began to function about November 1st, 1932. Since then we have been increasing our daily total population about ten patients per month, and with the capacity of this new building around one hundred and thirty, we should attain our absolute capacity by the latter months of this year. The function, for which this building was established, was not primarily to relieve congestion, but to give us adequate facilities to care for acute nervous and mental conditions. If this institution reaches absolute zero, as regards taking care of new admissions, there will then be no alternative but to resort to some new and possibly drastic measure in the form of "bartering" with the county from which the new admission is to come. We have learned to barter all sorts of commodities because of economic necessity. Since this matter of state care is a vital and expensive matter to the community, I see no reason why we should not investigate this subject of exchange of patients seriously. Already we have a very generous system of parole; but, this can only create just so many vacancies. It will be our endeavor, at this hospital at least, to have our records so in order, that when we can no longer admit a patient outright, we will have a group of convalescent, or fairly improved patients from each county enumerated and prepared to return to their home community. Then, when Stanton county, for example, calls to ask if we can receive a new patient, we will refer to our files, and say, "Yes, only on condition that you can receive Mr. So and So back into your immediate charge, rather than his occupying the space needed for your acute patient." If such arrangements can be effected, it will obviously entail some system of social service workers or field agents, that can make the necessary observations, to keep us in touch with the progress of these paroled patients. This field is relatively untouched in the middle and far west, and, if we want to cut down the numbers of our mental patients, and the resultant expense to the tax-payers, we will have to consider more seriously the laws and the methods that will help in this preventive program. We will have to press the enforcement of the sterilization measures to apply to certain types of delinquents, defectives and dementias. It will be our collective duty to disseminate such mental hygienic knowledge as is within our power. It will be our obligation to strive to improve along these lines, not only the health of the individuals and of the family, but, also of the whole social group of which they are integral parts.

PRELIMINARY REPORT OF THE ARTHRITIS SECTION OF THE DEPARTMENT OF PUBLIC HEALTH OF THE CITY OF LINCOLN, NEBRASKA*

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There has, in the past few years, been considerable discussion and speculation with respect to the value of vaccine therapy in the treatment of arthritis. Apparently there seems to be a trend in medical opinion that tends to be growing in favor of vaccine. The splendid reports of Burbank, Crowe, Cecil, Small, Wetherby, Goldfain, Mayer. Clausen, and many others, of their experience with this method of treatment, cannot be overlooked in the estimation of its propriety. It has been thought that the failure of vaccines in arthritis has been due to two major factors, the first, the ineffectiveness of the vaccine. By that is meant the use of a vaccine that has not the specific organism causing the type of arthritis from which the patient suffers. Second, improper dosage, or a lack of understanding of the more modern conception of what a dose of vaccine should do to a patient, or how he should react to such treatment. A discussion of this point will be taken up subsequently.

Vaccine therapy is not recommended to the exclusion of other therapeutic measures that tend to correct abnormal metabolic or endocrine processes, complicating pathological phenomena, disturbing foci of infection, or disabling deformities. Such measures have an important place in the adequate management of the treatment of arthritis. In our opinion there has been a tendency to over-treatment of these incidental complications of arthritis without specific attention being given to the intrinsic cause of the joint changes. To justify this statement we must assume that opinion has classified arthritis as a disease that is due to a microbe. Further, we must recognize the opinion that a streptococcus, with its many groups and morphological characteristics, is perhaps the great etiological factor in this disease in most instances. We assume further that the reason why the removal of foci of infection seldom not only fails to give permanent relief of joint symptoms, but also often causes a flare-up, and the correction of other pathological and metabolic disturbances does not cure the disease, is because the infective organism continues to exist in human host unmolested, in and about the joints and connective tissue structure.

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*Read, in part, before the Lancaster County Medical Society, February 7, 1933.

On the first of April, 1932, I was invited by Doctor M. F. Arnholt, Director of Public Health of the City of Lincoln, and by Doctor W. W. Carveth, deputy in charge of the general clinic, to utilize the facilities of the health department to treat the arthritic cases of the clinic with a stock vaccine prepared under the direction of Doctor H. Warren Crowe of London. Doctor Carveth states that the chronic arthritic cases of the clinic offered one of his greatest problems. All manner of proposed therapy had been used, often with limited relief for too short a period of time. They proved the bane of his efforts, and could never be satisfied, no matter what was done. Therefore, he welcomed the possibility of new co-operation in handling this problem. Doctor Crowe's instructions, as to dosage, were followed carefully in every instance. No foci of infection were removed or treated except as acute symptoms demanded. The only treatment aside from the vaccine, consisted of the use of sodium sulphate as a bowel regulator, and the systematic medication of minor disturbances, such as "colds," "stomach trouble," "billiousness," "headache" and the like, and other acute disturbing conditions.

A comparison of the results of the one hundred and six cases treated in the city clinic, herein reported, and one hundred and thirty-four privately treated patients, during relatively the same period of time, who were given the advantage of general therapeutic measures as well as autogenous and stock vaccine, would indicate that there was a certain relatively large group of patients who could not be successfully treated with stock vaccine and that these could be relieved by the use of autogenous, plus stock vaccine, when it contained the specific organisms to which the patient was sensitive. Through the co-operative efforts of Doctor Arnholt, the clinical laboratory of the health department is, during the ensuing year, going to enter upon a study of the bacteriology of these problem cases of the city arthritic clinic, in order that the service rendered to these patients will equal that given to private patients, thereby giving a greater relief than has hitherto been experienced.

For the purpose of tabulating and classifying our cases, we have recognized the following classifications of arthritis: 1. Rheumatoid Arthritis, 2. Osteoarthritis, 3. Fibrositis, 4. Mixed, and as complicating phenomena exist, a fifth group, into which are thrown metabolic, of nerve origin, traumatic, specific infection et cetera. We recognize, under the term Rheumatoid Arthritis, those conditions similarly described under the term atrophic arthritis, chronic proliferative arthritis and arthritis deformans. We recognize this type by its acute onset, its prevalence in younger decades of life, its tendency towards chronicity, fusiform swelling of the joints, particularly the small joints and its profoundly deforming tendencies. The Osteoarthritic group includes chronic degenerative arthritis and hyper-atrophic arthritis and is recognized by its insiduous onset, often lack of symptoms until marked changes are evident, by the bony overgrowth about the joint, its prevalence in affecting the large joints, except in the formation of Heberden's nodes, its prevalence in the back in the form of spondylitis and sacro-iliac exostosis et cetera. Under the term of Fibrositis are grouped non-articular disturbances, so-called muscular rheumatism, myalgia, neuritis et cetera. By Mixed Arthritis is meant that the patient shows evidence of rheumatoid, osteoarthritis, and perhaps fibrositis conditions, complicating each other in certain joints, or appearing in one joint as a rheumatoid and in another part as an osteoarthritis.

To grasp the conception of modern technique of the treatment of arthritis by vaccine, two old and accepted principles of vaccine therapy must be scrapped. They are first, that the bigger the dose of vaccine that the patient can take the better the affect, and second, that the bigger the reaction following the injection the better the result. Crowe says that these principles were based upon the fallacy that the blood immunity thus built up kills off the microbes. He further states that unfortunately, however high the blood resistance may be forced, as shown by agglutination, opsonic and bacteriological tests, the patient may get steadily worse. In other words, the vaccine very likely produces a tolerance to itself as equally to the bacteria which may, therefore, continue to grow unchecked. Whether his explanation is correct or not, clinical experience seems to justify the discarding of such principles, and we are guided in our estimation of the affect of the vaccine by totally different criteria than before. They are called: (1) Response, (2) Reaction, and (3), Relapse. These terms are offered by Crowe in his explanation of determining the proper amount of vaccine to be given., By a *response* is meant an immediate improvement following the injection of a dose of vaccine. That is, a rheumatic patient feels generally better, pains are less, sleeps better, stiffness is less. and his improvement may last one to seven days or more. In this instance we feel that the dose of vaccine that has been given is sufficient, and should not be changed. By a *reaction* is meant, not necessarily chills and fever and increase of pain, although we would consider such symptoms as a severe and dangerous reaction, but we consider as a reaction depression and exhaustion following the vaccine injection. Perhaps there is malaise, drowsiness, tinges of pain in the parts involved, and even in new joints, or at the point of infection, and a feeling of general discomfort. A marked loss of weight is evidence of a reaction. With any of these symptoms we are assured that the dose is far too great, and it is always cut one-half or one-quarter, and sometimes even one-tenth of the existing dose. We find, particularly in the treatment of acute or painful rheumatoid cases, that the dosage must be extremely small, or unfortunate reactions may occur that make it impossible to obtain a satisfactory result in the treatment of the patient. When the good affect of the dose of vaccine has worn off, there is a tendency for the symptoms

NAME—JOHN LATON AGE—65 OCCUPATION—FARMER WT.—204 LBS. HT.—5 FT. 8 IN.
DURATION—THREE YEARS TYPE—OSTEOARTHRIC - MIXED. DEAFNESS.

Date	Reaction Local Focal Gener.	Weight	Neck	Cervical	Dorsal	Lumbar	Lumbo-sacral	Lumbago	Sacro-iliac	Shoulder	Arm	Forearm	Wrist	Hand	Finger	Hip	Thigh	Sciatica	Knee	Leg	Ankle	Foot	Toe	Dose
9-22-32		204				x	R.L. x	x	x							R.L. x	x		x	x	x	x		100,000 Streptococcus—1
9-29-32	2nd day Malaise	203	Pain less after second day.			x	x	x	x							x	Feet Better.							100,000—No. 2
10-6		201	Severe general reaction for 24 hours, more pain in all regions.																					25,000 Combined
10-13	Dizziness 24 hours	202	Less pain in feet.																					25,000 "
10-20	Good Feeling 24 hours	203	Less pain generally. Sleeps well—best in years.																					50,000 "
10-27		204	Better week, some cramping in legs.																					50,000 "
11-4		204	More pain in low back.																					10,000 "
11-10		205½	Improved.																					10,000 "
11-17		205																						25,000 "
11-23		202	More pain this week.																					5,000 "
12-1		206	Good week.																					2,000 "
12-8		206½																						2,000 "
12-15		208	Better.																					2,000 "
12-22		209																						5,000 "
12-29		207½	"Misery" first three days.																					2,000 "
1-5-33		208½	Fine week.																					2,000 "
1-12-33		210	Feels better.																					2,000 "

to return. This renewal of symptoms is called a *relapse,* and it may occur anywhere from three to ten days after the injection. A clinical case record (note Patient's chart) will serve to illustrate the dosage used, and our method of tabulating the findings. On the left hand side is given the name of the patient, his age, occupation, weight, height and duration of the disease. Any unusual complicating factors are placed along the margin. Diagnosis is checked. The chart shows the date of the treatment; what the reaction, if any, was; the weight at the time the treatment was given; the parts involved, which are indicated by a cross or check in the appropriate space, and lastly comes the dose of vaccine given. You will note that for the first few weeks, while the dosage is being established, there is a marked fall-off in weight, and as a more appropriate dose is established, the weight gradually increases a little above the ordinary weight. This patient, John Laton, after his second dose of vaccine, lost three pounds of weight, and had a rather profound reaction. The dose was cut considerably, and the pain began to disappear. When the dose was increased again on October 20, 1932, and on October 27, 1932, more pain followed. Gradually, as the dosage was reduced, his weight constantly increased; he felt better continuously. Some of these patients are so susceptible that a dose of one hundred, or even less bacteria in the vaccine, gives a proper response of good feeling.

During the past ten months, one hundred and six different patients have been treated. Because of the fact that nine of these patients received less than three treatments and disappeared from under our care, these nine have been eliminated from the summary of our findings, but of the number of patients who were treated over a period of more than one month there were ninety-seven.

The total number of vaccine treatments given was eleven hundred and seventy-nine. The average period during which a patient was treated was three months. When this clinic was started four patients were examined the first day and treated. At the first four clinics the number never exceeded eight patients. Gradually, as the patients realized and appreciated the relief of symptoms, they advised their friends, suffering from similar complaints, to come to the clinic. As a result, during January and February of 1933, the average number of patients taken care of at each clinic period was between forty-five and sixty. It is indeed a task to care for so many patients in a two hour or two hour and a half period, but by good team-work between the doctors and nurses of the clinic, this is accomplished. The old patients are given preference, and are taken in turn as they arrive at the clinic. New patients must wait until the old patients have been cared for, and then a brief history and examination is given each of the new patients. More recently we have tried to provide a special period on Saturday to care for the new patients and get them started. No effort is made to treat any complicating factors except those that are acute, or that are causing complicating symptoms.

Twenty-nine patients, having been treated an adequate length of time, have been sufficiently relieved of the joint symptoms to be discharged and placed under observation at intervals of one month. An interesting side-light, with respect to the results, is that after these patients are discharged some of them will have a return of symptoms, particularly when some unusual change in the weather occurs, or they have an acute exacerbation of some foci of infection. Eleven of such patients came back to the clinic for treatment as soon as the pain in the joints reappeared. In most of these instances only one or two subsequent vaccine treatments were essential to bring relief. The average number of treatments given each of these patients was twenty-seven.

Diagnosis: Forty-four of the cases came within the Osteoarthritis group; twenty-five in the Rheumatoid group; twenty-five in the Fibrositis group; twelve in the Mixed group. Trauma was noted as a complicating factor in nine of these cases; tuberculosis in two cases; lues in two cases; gonorrheal infection in two cases. I am convinced that as time goes on we will find that by far a larger number of these cases have been influenced by trauma, than are indicated from this initial survey. Also, that many more will be classified as Mixed Arthritis than would be indicated from our present figures.

Sex: Contrary to the usual clinic surveys, the male outnumber the female patients suffering with arthritis. I think reasons for this are that during this past year a great many men have been out of work, subjected to more untimely exposure, poorer living conditions and surroundings, and have not had the proper food and physical activity that one sees in more prosperous years, therefore the symptoms of arthritis showed up. There were sixty-six male and forty female patients treated in this clinic.

Age: Their ages varied as follows: Those under twenty years of age, seven per cent; between the ages of twenty and thirty-five, twenty-two per cent; thirty-six and over, seventy-one per cent. The average age of all of these patients was forty-five and seven-tenths years.

Duration of symptoms: Only six per cent of our patients complained of arthritis less than a month prior to seeking relief of the symptoms at the city clinic. Eighteen per cent had had their symptoms less than a year. Seventy-six per cent had complained of arthritis more than one year. During the first few months of our clinic we saw no early cases; most of them were long-sufferers, but as the work of the clinic became known, more acute cases were frequently seen.

Weight: It is interesting to observe that during the first six weeks quite a number of the patients lost weight. This, however, corrected itself as the dose of vaccine was regulated to the physical reaction of the patient, and ultimately most of the patients showed a distinct gain in weight. There were a few, however, that lost a few pounds of weight, but one must consider the fact that many of these were in the later stages of treatment and were becoming more active physically as their disability left them. Another factor influencing this weight curve downward was the severe cold weather during the winter months, with accompanying undesirable living conditions, and complicating acute upper respiratory infections. Combating such conditions was probably responsible for the loss of weight in patients that were undergoing treatment. On the other hand, every patient that has been discharged without symptoms, has shown a distinct gain of not less than three pounds, to as high as eighteen pounds, in those that were particularly emaciated when treatment was started.

Deafness: Deafness was noted in nineteen of our cases. Nine of them fell in the Osteoarthritic group, three in the Rheumatoid group, five in the Fibrositis group, and two in the Mixed group. Most of them were elderly individuals. Our thought was that perhaps the arthritic process going on in the body might definitely be related to this condition. The history, in many instances, led us to this belief, as the onset of the deafness came simultaneously with the symptoms of arthritis. Doctor J. W. Thomas, who examined this series of cases, felt however, that in most instances, the deafness was due to the sclerosing processes of old age, and was not distinctly traceable, except in a few instances, to possible arthritic changes in the bony structure of the ear. However, he intends to continue these observations, as it seems to be more than a coincidence that the arthritic symptoms and symptoms of deafness should become manifest at about the same time.

Foci of infection: Fifty-four per cent of all of our series of cases have had foci of infection removed on account of their arthritis. None of these were relieved. Many of them had acute exacerbation of their arthritis as the result of such procedures. Five patients, whose symptoms were relieved after vaccine treatment, had disturbing foci of infection removed without any flare-up of their arthritis. We assume then, from that, that sufficient desensitization or immunity had been built up to prevent local exaggeration of symptoms by the operative procedure.

SUMMARY

Although these observations cover a period of only ten months, which is too short a period to deduce positive statements as to results, there has passed, however, a sufficient length of time to draw some rather definite conclusions with respect to properly given vaccine therapy for arthritis. Briefly our findings are as follows:

First, twenty-five per cent of the patients that continued treatment a sufficient length of time to obtain a result were completely relieved of symptoms to the extent that treatment was discontinued.

Second, of the remaining seventy-five per cent of the patients:

1. Eighty-six per cent of the patients were considerably relieved.

2. Twelve per cent had a limited relief.

3. Two per cent had no relief whatever.

4. Of those patients that were relieved, by far the greater number fell in the Osteoarthritic, Rheumatoid, and Mixed groups. Those that did not receive a great deal of relief were mostly among the Fibrositis and Mixed groups.

5. The weight curve forms a very important estimation of the appropriateness of the dosage, as the weight usually increases with the proper dose and there is a diminution of symptoms, unless complicating constitutional conditions interfere.

6. Foci of infection can be removed much safer after the patient has been desensitized by treatment, or one might say, after his immunity has been built up by vaccine therapy.

7. Careful charting of symptoms each week are essential to estimating the results.

Reasons for failure:

1. Unfavorable living conditions, lack of food, clothing and warmth, inactive life and exposure.

2. Complicating constitutional disturbances, and innumerable foci of infection.

3. Inability to desensitize, due to the fact that stock vaccine used is not specific in its action on many cases.

For the future:

I believe that as we develop our bacteriological laboratory, with the possibility of selecting streptococcus organisms to which the patient is susceptible, or to which they have not developed an immunity, we will develop vaccines of a more specific therapeutic value that will lead to the cure of many of these cases. Foci of infection will be removed, complications treated, and then these patients will have the advantages given my private patients, who are checked by selective tests, for sensitivity and so forth, which is so essential to the complete analysis of therapeutic possibilities for the arthritic patient.

MATCH DERMATITIS—REPORT OF UNUSUAL CASE

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Dermatitis due to matches is not particularly uncommon although it is seldom recognized by the physician doing general practice.

The first case reported in the literature is by Raasch(1) of Copenhagen in February 1918. G. H. Fox(2) reported the first American case in November 1918.

According to Foerster(3) the dermatitis is usually due to phosphorus sesquisulphid which is an ingredient of the striking edge of match box containing the so-called "safety" match. While in the "strike anywhere" match phosphorus sesquisulphid is contained in the match head.

The type of eruption produced may range from a mild erythema with slight burning or itching to an acute markedly erythematous patch with oozing. It usually appears first on the thigh under the pants pocket or on the anterior lateral surface of the upper abdomen under the vest pocket. From this original area the eruption may become quite widespread. However, not all cases begin in the above mentioned areas as illustrated by the case here reported.

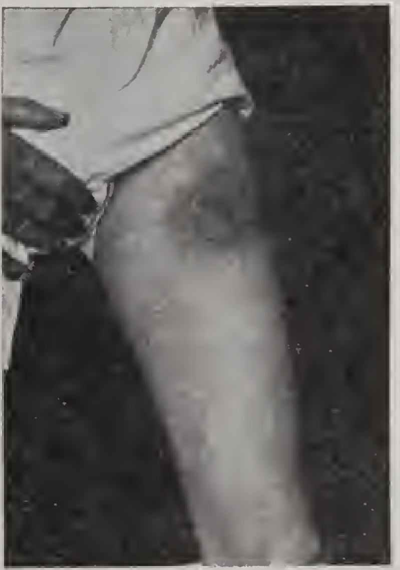
The prognosis is good and the treatment is the avoidance of matches and match boxes plus the local use of a soothing preparation.

Several unusual features prompt me to report the following cases:

Mr. L. D. H., 39, white, purchasing agent for a bridge construction company first presented himself for treatment August 29th, 1932, complaining of soreness under both thumb nails and the nail of the right index finger, eruption about the eyes, on the hands and on the anterior surface of the left thigh.

Under the free edge of the three nails the skin was erythematous and slightly scaly with several small fissures. The fingers and dorsum of both hands presented a mild blotchy erythema with a few small scattered vesicles. The lids of both eyes were erythematous and scaling with some edematous swelling due to which the left eye was about one-third closed. On the anterior surface of the left thigh was a palm sized erythematous, indefinitely outlined, scaly patch, the center portion of which presented many small vesicles. A diagnosis of match dermatitis was made and three matches were found in the overlying pocket.

On questioning, the patient stated that he carried matches in both anterior pants pockets, sometimes one, sometimes the other. There had never been any irritation under the right pocket. For years he had been in the habit of striking matches with the right thumb nail. No irritation was noticed prior to the middle of December, 1931, when a small piece of match head broke off, burning under the thumb nail.



Match Dermatitis.

Due to pain from this burn the left thumb nail was used. About two weeks later it also become sore. During the next week or two both thumb nails were used at times as was the right index finger nail which also became painful. About this time the eyelids became somewhat reddened with more or less itching and the hands, at times, itched and burned.

He consulted a physician in January, 1932, who made a diagnosis of "Ringworm of the Nails" and "Seborrheic Dermatitis" about the eyes. Treatment was instituted and continued more or less faithfully with little improvement. At times the eyes were almost completely closed.

The latter part of April (four months after the onset of the eruption about the hands and eyelids) the patch developed on the left thigh.

Matches were discarded and a lighter used instead. Under a soothing preparation, all itching and burning disappeared in forty-eight hours. Only erythema remained about the eyes and on the left thigh. After four days, matches were again carried in the pocket for about twelve hours. Within four hours itching and burning with acute erythema returned and the accompanying photo was taken. Soothing preparations were again used for a week and discontinued. There has been no return of the eruption.

SUMMARY

1. An unusual case of match dermatitis is presented.

2. Although matches had been lighted with the nail for years, no trouble developed until a burning portion of the match head lodged under the nail.

3. The eyelids were involved three weeks later.

4. Not until four months later did the patch develop under the pocket.

5. The patch developed on one thigh only, although matches were carried indiscriminately in both anterior pants pockets.

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A CASE REPORT OF AN AGRANULOCYTIC ANGINA*

KENNETH C. BAKER, M. D.,
Holdrege, Nebr.

Agranulocytic Angina is a disease in which there is an extreme reduction of granulocytes. This disease is also called Granulopenia, and Agranulemia. The term agranulemia seems to be the most logical one, the term being coined by Dr. Clyde Brooks and Dr. Eugene Payne of New Orleans. It is a disease with an exceedingly high mortality, the mortalities depending a great deal on the etiological factor. It is characterized by a marked anemia and an extreme lowering of the white blood cell count and of the polymorphonuclear cells. Death is usually due to an intercurrent infection, due to the fact that the patient has little or no resistence to fight it. The etiology of primary agranulemia is usually the oral lesions such as sore throat, or upper respiratory infection of some kind. It may, however, be due to allergy, endocrine disturbances, or congenital deficiency of the bone marrow. Also chemical poisons are to be considered. The causative agent acts chiefly on the bone marrow. In the case to be reported the etiological factor was some unknown organism, possibly B-Influenza or some strain of streptococci.

The blood cultures are usually negative. It does not yield itself to therapy readily. Blood transfusions have been greatly used in this disease. Some authors state that this procedure is a benefit; others doubt it. Roentgen rays have been used with some success. Friedmann Eckles reported some degree of success with the x-rays. Chemical agents such as Neucleotide (which are intended to stimulate the bone marrow), have been proven satisfactory in few cases. Jackson and co-workers treated thirteen typical cases of agranulocytic angina with neucleotide, seven of which recovered.

On October 1, 1932, a patient, male, age 23, came to me stating that he had a severe cold. He complained of a severe frontal headache, fever, chills, sore throat, general malaise, and inability to see with his right eye.

He was working on a local paving outfit, and contracted an acute upper respiratory infection that was going around at that time. He first noticed it on Thursday, October 12. The following day he noticed that he was unable to see through his instrument with his right eye, and so consulted an eye, ear, nose, and throat specialist who observed a retinal hemorrhage of the right eye. The patient later came to me.

Physical examination revealed a well developed young man of stated age. From all appearances he had rather a high temperature. Due to the fact that he was tanned, the underlying anemic condition was not so perceptible. However, the conjunctivae of both eyes and the mucous membrane of his lips were remarkably pale. The throat was typical of a streptococcus infection; the tonsils were present; the anterior pillars were infected; and no pus was expressible from them. Examination of his chest was negative, abdomen negative, temperature 103.6°, pulse 116, respirations 20.

Past history: Patient was apparently in good health until approximately June, 1932. At that time, while in McCook, Nebraska, he consulted a dentist in regard to his teeth. He was having some pain in the region of his molars. Diagnosis was made of peridontal infection of three molars which were subsequently treated. After some period of treatment the dentist removed the three infected molars and packed the sockets with cotton. Apparently the patient either neglected to return to the dentist at a later date, or the dentist neglected to treat him further, because the patient stated that the "cotton popped out" at a later date. Soon after this the patient complained several times of not feeling up to par and began to tire easily. Throughout the summer this persisted and along the middle of August he began to have severe frontal headaches. Both the weakness and headaches continued up to the time I first saw the patient.

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*Read before the Phelps County Medical Society, Holdrege, December 13, 1932.

Family history: The father, mother, and two sisters are living and well. Neither of the two sisters has ever had any blood disease, nor is there any history of blood disturbance comparable to that of the patient's in either the paternal or the maternal families.

Onset and development: Considering the case that of an acute upper respiratory infection, the usual treatment was instigated. The blood picture on October 14 was: Hemoglobin 42%; RBC 3,200,000; WBC 7,800; differential count not done; clotting time six minutes; urinalysis essentially negative. Patient was seen the following day at his home when at that time he showed improvement from his grippy condition. Treatment was begun for his anemia and Jaculin, orally (Upjohn Company), and Ferro-Arsen, intravenously, (Breon) was given. On the morning of October 16, about 2:30 a. m., I was called because the patient was bleeding from his throat and gums. I found a frank hemorrhage from both tonsils; the principal bleeding came from the region of the posterior pillars. Also there was considerable oozing from most of the incisors and several of the pre-molar teeth. I gave the patient the maximum dose of Lilly's Normal Horse Serum. After waiting a long enough period of time to note the effect, I repeated the dose. Topical applications of several hemostatics were applied without any apparent checking in the bleeding either in the tonsils or along the gums. I finally checked the bleeding by using 50% silver nitrate. The next morning the bleeding from the gums had resumed, however, not in quite as marked a degree as previously; so I gave the patient an ampoul of calcium chloride intravenuously and again used topical applications. The bleeding was apparently checked for the time being, but the patient's general condition seemed weaker. The blood count at this time revealed practically the same picture. Realizing the low resistence of the patient I urged a transfusion and hospitalization. This was refused on account of financial reasons. In order to give him every possible chance to get back on his feet at as early a date as possible, I started to give him daily injections of Normet's solution.

About this time I began to realize that I had something unusual with which to deal. I was convinced that it was not a puerpera hemorrhagica or hemophilia. Although the clotting time was quite prolonged, I attributed this to his anemia. No clinical symptoms of either of the two mentioned diseases were demonstrable with the exception of the bleeding, which had been very difficult to stop. On Oct. 20, the patient again began to bleed from his tonsils. so 10 cc. of his own blood was taken, and injected intragluteally. At the same time Parathormone "Lilly" was started. Even though a blood calcium determination was not very much below normal limits, it did not lead me to think of a marked calcium deficiency. The blood culture was also negative. In the afternoon of Oct. 21 I was again called to the home on account of bleeding from the patient's gums. At this time I called in a dentist, hoping that he could offer something and stop the bleeding. This was done by packing the gums. His explanation for the bleeding was that it was not due to local pathology.

In the afternoon of the following day, I was called to see the patient and found that he had just fainted. Realizing again the serious condition, I took the situation in my own hands and brought him to the hospital where preparations were made for a transfusion. It was at this time that I had sufficient opportunity to study his blood picture again and do repeated differential blood counts. The hemoglobin was 37%; RBC 2,400,000; and WBC had dropped to 6,100. The differential showed polymorphonuclears 55%, Lymphocytes 40%, and transitional cells 5%. A little later in the day I again checked the differential count and found it practically the same. I was unable to explain the sudden drop in both the white count and the low number of polys. I thought this was probably due to a lower resistence, and not knowing of such a disease as agranulocytic angina, I did not suspect anything different.

The morning of Oct. 28, 490 cc. of blood was given to the patient, the father being used as a donor. After that the patient rallied and apparently seemed to make a very satisfactory convalescence. The hemoglobin was raised to 52%, RBC to 3,100,000. During the next few days intensive treatment was again instigated to treat his anemia. On Oct. 26 the patient began to complain of a sore throat, and the following day a definite acute sore throat followed. Various throat antiseptics were used and S.T. 37 seemed to act the best in subsiding the local throat condition. Ephedrine drops were used in his nose and other supportative treatment was given to break up the on-coming respiratory infection. On Oct. 28 I saw the patient early in the morning at the request of the special nurse who had been secured for him when the throat condition arose. He apparently had quite a set-back from the throat infection; so I thought it advisable to give another transfusion. At this time while matching up the donor another blood count was done. The hemoglobin had dropped to 44%, RBC to 2,600,000; WBC 2,200, and a differential count showed very few polys. The patient received very little reaction from the transfusion but was apparently better throughout the day. The following morning the patient's special nurse called me and informed me that the patient was again bleeding from his gums, even though he had been seen by the dentist the previous evening and had his gums packed for bleeding at that time. I decided it was advisable to have a consultation. Dr. A. D. Dunn of Omaha was called and consented to come out here at once by airplane. A few hours later he arrived accompanied by Dr. Lowell Dunn, also of Omaha. After extensive laboratory work was done and complete investigation of the case was made, we diagnosed the case as agranulocytic angina.

At the advice of Dr. A. D. Dunn the following treatment was outlined, namely: Repeated blood transfusions; the use of Neucleotide; K-96-(A preparation of the mixture of sodium salts of pentose neucleotide); hemostatics when indicated; and general symptomatic treatment.

Naturally the question of daily transfusions troubled me considerably, but due to the fact that the patient was an engineer on the local paving job, I was able to secure volunteers from his fellow workmen. Daily transfusions were given using from three to five hundred cc. at each time. One or two of these were followed by some amount of reaction, but various stimulations such as caffeine sodio-Benzoate, heat to the body, etc., soon relieved the patient of the same. I soon learned that giving morphine 1/6 and atrophine 1/150 when he was about one-half way through the transfusion diminished the likelihood of having a reaction even though the blood was matched up perfectly for each transfusion. The direct method of matching was used and citrated blood was given. The transfusions later in the week, namely on Nov. 2 and Nov. 3 became harder to give because suitable donors were difficult to find. On Wednesday, Nov. 2, the patient again complained of his throat bothering him. In spite of all precautions such as the use of oral antiseptics and the like, I found a beginning acute tonsillitis. The thing developed like wild-fire and the next morning a malignant ulcerated tonsillitis of both tonsils was well under way. The patient began to run rather a septic temperature and complained bitterly of his throat. Vomiting started at this time, no doubt due to the swallowing of mucous into his stomach. His blood picture then showed hemoglobin 32%; RBC 2,100,000; WBC 400. As the patient was unable to take much nourishment by mouth, 300 cc. of 20% glucose was given intravenously various times during the day. On the evening of Nov. 4, the patient had a severe nose bleed which did not respond to any hemostatics given including Ciba's Coagulen of Fibrogen. Finally repeated nasal packs together with the cautery to Jacobson's point stopped it. The next morning the patient was quite weak, but yet did not seem to loose his morale, which he carried all the way through his illness. Fibrogen was given him throughout Nov. 5, hoping that it would help the small amount of oozing that was coming from his tonsils more or less continuously. Another transfusion was given with the hope that the blood count would be raised, but much to my surprise I found it did not do so. Throughout the day the patient became very weak, his pulse became irregular and threaty, and respirations were also irregular. Cheynes-Stokes respirations started on this date but finally ceased after large amounts of Coramine (CIBA) was given. Beginning jaundice, particularly of the conjunctiva of both eyes was noticed. The next morning the jaundice was much more marked on his whole body. Suspecting either Cholangitis or a piling up of the broken down red cells in the liver, giving an obstruction there, I attempted to stimulate the liver and gallbladder by calomel and salts. Stool tests revealed no bile coming through the intestinal tract. However the blood count at this time, which was the sixth day after the use of Neucleotide, began to show a slight increase in the white cells. The count had increased from 400 to 1200. Throughout the day general symptomatic treatment was given for his restlessness and the high fever. The patient was more or less irrational and for the first time during his illness was not cooperative. During the latter part of the day stool examinations revealed bile in them, another slightly encouraging sign. On the evening of this day, Nov. 6, the patient became extremely maniacal. Various sedatives were used without avail; his temperature had been reduced from 105.6° to 103°; and the patient was finally quieted. However, later from no apparent immediate cause, the patient died, evidently from acute dilatation of the heart.

REPORT OF McDOWELL'S FIRST OVARIOTOMY

Published in Eclectic Repertory in 1810.

Three Cases of Extirpation of diseased Ovaria

By EPHRAIM McDOWELL, M. D., of Danville, Ky.

In December 1809. I was called to see a Mrs. Crawford. who had for several months thought herself pregnant. She was affected with pains similar to labour pains. from which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy, that two physicians. who were consulted on her case, requested my aid in delivering her. The abdomen was considerably enlarged, and had the appearance of pregnancy. though the inclination of the tumor was to one side. admitting of an easy removal to the other. Upon examination, per vaginam, I found nothing in the uterus; which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt, or success attending any operation. such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo an experiment. which I promised to perform if she would come to Danville, (the town where I live) a distance of sixty miles from her place of residence. This appeared almost impracticable by any, even the most favourable conveyance. though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James M'Dowell. M.D., I commenced the operation. which was concluded as follows: Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation. I made an incision about three inches from the musculus rectus abdominis. on the left side, continuing the same nine inches in length. parallel with the fibres of the above named muscle. extending into the cavity of the abdomen. the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during her journey. The tumor then appeared full in view. but was so large that we could not take it away entire. We put a strong ligature around the fallapian tube near to the uterus; we then cut open the tumor which was the ovarium and fimbrious part of the fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous looking substance. After which we cut through the fallopian tube, and extracted the sack. which weighed seven pounds and one half. As soon as the external opening was made, the intestines rushed out upon the table; and so completely was the abdomen filled by the tumor, that they could not be replaced during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side, so as to permit the blood to escape; after which, we closed the external opening with the interrupted suture, leaving out, at the lower end of the incision. the ligature which surrounded the fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressings, put her to bed, and prescribed a strict observance of the antiphlogistic regimen. In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future; and in twenty-five days, she returned home as she came, in good health, which she continues to enjoy.

Since the above case, I was called to a negro woman, who had a hard and very painful tumor in the abdomen. I gave her mercury for three or four months with some abatement of pain; but she was still unable to perform her usual duties. As the tumor was fixed and immovable, I did not advise an operation; though from the earnest solicitation of her master, and her own distressful condition, I agreed to the experiment. I had her placed upon a table, laid her side open as in the above case; put my hand in, found the ovarium very much enlarged, painful to the touch, and firmly adhering to the vesica uninaria and fundus uteri. To extract I thought would be instantly fatal; but by way of experiment I plunged the scalpel into the diseased part. Such gelatinous substance as in the above case, with a profusion of blood, rushed to the external opening, and I conveyed it off by placing my hand under the tumor, and suffering the discharge to take place over it. Notwithstanding my great care, a quart or more of blood escaped into the abdomen. After the hemorrhage ceased, I took out as clearly as possible the blood, in which the bowels were completely enveloped. Though I considered the case as nearly hopeless, I advised the same dressings, and the same regimen as in the above case. She has entirely recovered from all pain, and pursues her ordinary occupations.

In May 1816, a negro woman was brought to me from a distance. I found the ovarium much enlarged, and as it could be easily moved from side to side, I advised the extraction of it. As it adhered to the left side, I changed my place of opening to the linea alba. I began the incision, in company with my partner and colleague Dr. William Coffer, an inch below the umbilicus, and extended it to within an inch of the os pubis. I then put a ligature around the fallopian tube and endeavored to turn out the tumor, but could not. I then cut to the right of the umbilicus, and above it two inches, turned out a scirrhous ovarium, (weighing six pounds) and cut it off close to the ligature, put round the fallopian tube. I then closed the external opening, as in the former cases; and she complaining of cold and chilliness, I put her to bed prior to dressing her—then gave her a wine glass full of cherry bounce, and thirty drops of laudanum, which soon restoring her warmth, she was dressed as usual. She was well in two weeks, though the ligature could not be released for five weeks; at the end of which time the cord was taken away; and she now, without complain, officiates in the laborious occupation of cook to a large family.

—Kentucky Med. J.

CHRONIC GASTRIC ULCER IN CHILDREN

J. C. Foshee, Grand Rapids, Mich. (*Journal A. M. A.*, Oct. 15, 1932), points out that chronic gastric ulcer in children is more common than has been supposed, although it still remains noteworthy for its rarity of recognition. Undoubtedly, in the future, more cases will be recognized and reported if these children are given the same careful examination and investigation that is given to adults. The cause is as indefinite as it is in adults. Infection in children plays the most important role. The ulcer constitution in some cases stands out paramount, for in them it begins with their early infancy, before infection has become a factor. Influencing factors, such as alcohol, tobacco, overwork and nervous tension, play no part in the cause of ulcers in children as they may in adults. The patologic changes are quite extensive and as massive as those found in adults. Penetration and perforation are almost the rule, with the invasion of the adjacent organs. Symptoms that are quite pronounced and typical of ulcer may go a considerable time unrecognized until the patient suffers hemorrhage or perforation. Fourteen of nineteen patients with this condition recovered, thirteen of whom were operated on. One patient recovered under medical management. One of the five patients who died was operated on, but the case was not recognized, since it was mistaken for a peritonitis from acute appendicitis, but autopsy revealed a perforative ulcer on the lesser curvature and a normal appendix. The four remaining cases were discovered at autopsy. Posterior gastro-enterostomy was performed in twelve cases and a partial gastric resection with anterior anastomosis in one; all were successful, and those patients have not shown recurrences of either gastric or marginal ulcers.

"I'm afraid I cannot sell poison without medical authority."

"Why, do I look like a man who would kill himself?"

"I don't know, but if I looked like you, I might be tempted."

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CARE OF THE INSANE NOW AND FIFTY YEARS AGO

Forty, fifty and more years ago, unfortunates committed to the hospitals for the insane received little more than custodial care because little was known by way of treatment that was beneficial to the patients.

The so-called insane of former days are now recognized as human personalities who have been unable to make a proper adjustment to whatever situations have confronted them. The individual is being studied as to what he has to react with, namely, his physical and intellectual make-up, his habits, instincts and emotions. The situation which has led to his mal-adjustment is regarded as what the patient has to react to, whether it is toxic or organic factors or whether it is entirely psychogenic, either external or internal.

These facts ascertained are utilized in the common sense approach to the treatment of the patient. For instance, hyper-active patients are quieted by release of energy through continuous baths instead of narcotics and restraint as formerly; hypo-active patients are stimulated by tonic baths, and by creating new interests, beauty treatments strengthening self-assertion and self-reliance, occupational accomplishments giving courage and confidence.

Cases of dementia are kept continually active to preserve the functions yet present and to redevelop those that will give the individual a chance to become useful.

Dementia paralytica is given its antidote, malaria, with successful destruction of the spirochete, and considerable regeneration of nerve tissue.

The psychoneurotic is permitted to "aireate" his troubles. Suggestion is used as treatment. "Know thyself" is continually prescribed through psycho-therapeutic literature and contact with the psychiatrist. Psycho-analysis is used to reconstruct personalities.

Finally have we come through ages of darkness and superstition to a common sense understanding of the mal-adjusted individual.

"Truly the thoughts of man are widened with the process of the suns."

BARTERING PATIENTS WITH STATE HOSPITAL FOR INSANE

The suggestion made by Dr. J. C. Nielsen, Superintendent of the Norfolk State Hospital, that in these times of financial stress, admissions be placed on a "barter" basis, seems at first thought somewhat shocking. The suggestion had its origin in the fact that the available capacity of the hospital is taxed to the utmost, and additional buildings will not be available for at least three years.

The suggestion, when brought out in the open, resolves itself into this: that when a county asks for admission of a patient, the hospital authorities suggest to the county authorities that they can make room for the new patient only on condition that the county authorities are willing to receive back and care for in the county, one of their least troublesome, convalescent patients. Advice will be given by the hospital authorities to the county if they wish, of the best possible way of caring for the convalescent patient, whether he should be boarded out with a family, whether he should be placed on a farm, as to what medical attention is necessary, etc. It will bring the state hospital in closer contact with the counties in its district. It will necessitate psychiatric social workers in connection with the hospital in the future. It will be the first step in a program of mental hygiene in the hospital district.

The proposition has considerable merit and should appeal to all thinking people.

The article in this issue, "Some Responsibilities of the General Practitioner in the Care of Mental Patients," touches on this matter.

The Literary Digest's poll shows that physicians favor repeal of the Prohibition Law. Maybe the drys think we need more dry doc's.—Greensboro Herald-Journal.

The Incoming President Greets the Membership

GREETINGS *to the members of the Nebraska State Medical Association, and also to the Woman's Auxiliary:*

I wish to take this opportunity of expressing my gratitude to one and all for the honor conferred upon me, and I shall do my utmost to merit this trust. It shall be my endeavor at all times to devote myself to the many problems that are confronting us all this year. Our entire nation is undergoing a rapid change, however, the light is beginning to dawn on a more hopeful era. It is the duty of all to have patience, and to do their bit toward helping our nation back to prosperity. This is not only true in national affairs, but also true of the problems that confront the medical profession of our state. These problems seem great, but with patience, perseverance and cooperation of all as a unit, I am sure that the old saying "Better days are coming", shall not prove an idle jest.

I feel that with your confidence and loyalty, we collectively can tackle our many problems one by one and again be the victors, as has always been the history of our State Association. Times like we are experiencing now, always bind our ties closer and closer, and with our combined united effort, we cannot fail.

—ADOLPH SACHS.

ADOLPH SACHS
M. D., F. A. C. P.

Adolph Sachs was born in Cheyenne, Wyo., in 1885, was educated in the public schools of Omaha, graduated from Creighton University College of Medicine in 1907 and after interning a year at St. Joseph's Hospital, located in Omaha, he spent two years from 1909 to 1911 doing post-graduate work in internal medicine in Berlin, Vienna and London. In 1913 he again returned to Vienna for nine months doing further post-graduate work in internal medicine. He also did some special work in New York, Boston and other cities.

He has been connected with Creighton Medical College in a teaching capacity since 1908 and at present is professor of medicine. He has held and is still holding a number of executive positions in connection with Creighton Medical College and St. Joseph's hospital.

He is attending physician at St. Joseph's, St. Catherine's, Lord Lister and Nicholas Senn hospitals and consulting physician at the Douglas County hospital. He was president of the Omaha-Douglas County Medical society in 1926; he is Governor for Nebraska of the American College of Physicians, a position he has held for a number of years, and is president-elect of the Nebraska State Medical Association and will become president at the forthcoming annual meeting May 23-25. He is a member of a number of special medical societies and is a Fellow of the American College of Physicians.

Dr. Sachs is a voluminous writer on medical subjects and many of his articles have been published in this Journal.

Dr. Sachs devotes himself to internal medicine.

Dr. and Mrs. Sachs have one daughter now in college.

SERVICE IN THE HOUSE OF DELEGATES

The House of Delegates is the legislative body of the State Medical Association. Service in the House should be taken seriously. Election as a delegate is an honor few physicians decline, but many do not take seriously. An analysis of the roll call of the last house of delegates discloses that 63 physicians were elected to the house, that 14 delegates attended the three sessions of the house and 22 others attended one or two sessions. This is less than 60% attendance. This is exclusive of the executive officers, councilors and ex-presidents who are delegates ex-officio.

The many matters of prime importance that come before the house of delegates for solution each year demand a greater interest and a deeper feeling of responsibility from those honored by election as representatives of the units of organization if the greater good to the association is to result.

The By-Laws relating to the house of delegates are herewith re-published that we may refresh our memories:

CHAPTER IV.—HOUSE OF DELEGATES

Section 1. The House of Delegates shall meet annually at the time and place of the annual session of the Association, and shall so fix its hours of meeting as not to conflict with the first general meeting of the Association, or with the meeting held for the address of the president and the annual orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with their duties. But if the business interests of the Association and profession require, it may meet in advance, or remain in session after the final adjournment of the General Meeting. Every member, except president and vice president, of the House of Delegates, as defined in Article V of the constitution, is eligible to vote. No delegate is eligible to any office except that of councilor.

Sec. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every fifty members or fraction thereof, but each county society holding a charter from this Association, which has made its annual report and paid its assessment as provided in this Constitution and By-Laws shall be entitled to one delegate.

Sec. 3. Ten of the registered members of the House of Delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Association.

Sec. 4. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, in such a manner that not more than one-half of the delegates shall be elected in any one year. The necessary railroad fare for the delegates shall be paid by the State Association.

Sec. 5. It shall, upon application, provide and issue charters to county societies organized to conform to the spirit of this Constitution and By-Laws.

Sec. 6. It shall divide the counties of the state into twelve Councilor Districts, and each shall be represented by a resident councilor.

CHAPTER V.—ELECTION OF OFFICERS

Section 1. All elections shall be by secret ballot, and a majority of all votes cast shall be necessary to elect.

Sec. 2. The House of Delegates, on the first day of the Annual Session, shall elect a president pro tem, who shall preside in the absence of the president of the Association, and it shall select a Committee on Nominations, consisting of one delegate from each Councilor District. No delegate shall be eligible to appointment on this Committee who has not been three years an active member of this Association. It shall be the duty of the committee to consult with the members of the Association and to hold one or more meetings at which the best interests of the Association and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of president-elect, and of one member for each of the other offices to be filled at that annual session. Said nominating committee shall be bound upon its honor not to divulge its deliberations, nor any part of the ticket agreed upon, until called for, as provided in Section 3 of this chapter.

Sec. 3. The report of the nominating committee and the election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General Session.

Sec. 4. Nothing in this article shall be construed to prevent additional nominations being made by members of the House of Delegates.

Sec. 5. The officers of this Association, except president and president-elect, shall assume their duties January 1st, following their election.

OBSTETRICS IN THE HOME

Since 1914 we have celebrated the second Sunday in May as Mother's Day, dedicated to the most idealized, the best loved, the most important person. This year the Maternity Center Association of New York challenges us to pledge ourselves, in the name of our own mothers, to make motherhood safe for all mothers.

A spirited controversy has been waged of late over the respective merits of home obstetrics versus hospital obstetrics. This controversy was engendered by an article which recently appeared in the *Journal of the American Medical Association* in which Dr. Joseph De Lee of the University of Chicago proclaimed in no uncertain terms that the safest place in which to have a baby is in the home and the worst possible place is in the general hospital. His arguments were supported by an array of impressive statistics together with quotations from eminent authorities. Infection accounts for forty per cent of all maternal deaths and it is contended that it is impossible to adequately isolate the parturient woman from the contaminating influences of infection in the general hospital. Will Rogers would go a step further in suggesting that "it would be safer, if you are figuring on having a baby, to go to some uncivilized country, like India or Africa, to do it."

Home obstetrics began on the American Continent in pre-colonial days. Benjamin Rush, writing of obstetrics among the North American Indians of those days, observed that "Nature is their only midwife. Their labors are short, accompanied by little pain. Each woman is delivered in a private tepee, without so much as one of her own sex to attend her. After washing herself in cold water, she returns in a few days to her usual employment, so that she knows nothing of those accidents which proceed from the carelessness or ill-management of midwives, or those weaknesses which arise from a month's confinement in a warm room." Under the civilizing influences of the white race women lost their capacity for easy and short childbirth. Their labors became more and more prolonged, due in large part to the debilitating influences of their acquired habits, to the development of a disproportion in the babies heads and the pelvis of the mother, but more than all else to account for the added hazards of childbirth was the advent of the untrained midwife.

It is known that one or more midwives came to America on the Mayflower. In the journal of John Winthrop, Sr.. January 1, 1630, it is recorded that "a woman in our ship fell in travail, and we sent and had a midwife out of the Jewel" (an accompanying vessel). In colonial days there were a few midwives imported from Europe who possessed some degree of training in midwifery, but for the most part the midwives who dominated the practice of obstetrics were of the same sort that we find today delivering fifteen per cent of the babies in the United States. We know nothing of the results of this early obstetrics for there were no vital statistics, but it is safe to assume that the maternal death rate and the infant death rate were appallingly high. As evidence of the limitations of these midwives, I quote William Shippen, Jr., who established in Philadelphia the first obstetric teaching clinic. "He thought it his duty immediately to begin his Courses in Midwifery, and has prepared a proper apparatus for the purpose, in order to instruct those women who have virtue enough to own their ignorance and apply for instruction." Shippen was moved to establish the clinic because "having been lately called to the assistance of a number of women in the country in difficult labors, most of which were made so by the unskillful old women about them."

Poorly trained as are our midwives of today the fact has been definitely established by the White House Conference on Child Welfare and Protection that the maternal mortality in their hands is lower than in the hands of the general medical profession. Couple this statement of fact with another no less authentic that the maternal mortality in rural practice is less than in urban practice and the reasons are not hard to find. They are two-fold, the dangers of infection are less in the home than in the hospital and there is not so much meddlesome interference in home obstetrics. The demand on the part of expectant mothers for painless and short labors, has led to unwarranted practices by the medical profession. Anesthetics, both inefficient and dangerous, are employed, and operative interference has entered to a degree that cannot be justified. These evil practices have been fostered in hospitals, partly in response to the demands of patients and partly for the convenience of the doctor.

In this time of financial stress there is an added argument for home obstetrics. There is the urgent need of economy. All will agree that complicated cases should be hospitalized but these constitute not more than five per cent of all obstetrics. The other ninety-five per cent can be cared for in the home with greater safety and economy than in the hospital. Is it not up to the medical profession, general practitioner and specialist alike to recognize their obligation?

—Palmer Findley, Omaha.

CHILD WELFARE: SUNNY BOYS AND SUNNY GIRLS

Among the problems of child welfare, that of the pre-school child is at present being the most emphasized.

A survey in the United States in 1930 showed that there were 16,000,000 children under the age of 6 years.

"These children constitute almost 13½% of the entire population of the country and are the children who in a short time will be found in our schools and a little later as adults will take their place as citizens."

This is a quotation from the report of the committee on the infant and pre-school child of the White House Conference on Child Health and Protection of 1930.

The report goes on further to say, "The group of children within this age range despite their number, which is as great as that of children in the grammar school, receive relatively little attention from society as a whole. For instance, public expenditures for the welfare of children within this range are slight, almost insignificant in proportion to the amount expended on older children. Even the kindergarten, literally, has had to fight its way.

At the present time only 27% of children in the United States between the ages of 5 and 6 are in the kindergarten.

In view of the fact that we consider the preschool period as the most important from the standpoint of proper habit formation and, also, of the development of immunity to various infections as well as of building the foundations for health and strength in later childhood it can be readily seen that there is a great field for work and study here.

This work is an obligation, not only upon the parents as individuals but upon society as a whole.

The social obligation is being more and more fully recognized and organizations are being developed over the whole country for the purpose of studying childhood and its needs.

We as physicians must take our part in this new development.

The children's charter adopted by the White House Conference expresses the purpose of these organizations.

President Hoover in his address at the beginning of the conference said "One of the biggest of all problems is to drive in this idea of the necessity of properly born, trained, educated, and healthy, moral children to the voters and officials of America. This conference on Child Health and Protection was a start but only that. We must keep it alive and burning.

"This conference was the aftermath of years of investigation and experience of the best and most devoted of Americans. It evolved a 'Children's charter' of nineteen points that needs to be in every household and every government office.

"We must follow this national conference with a series of state conferences, then group, and, finally individual town, and city conferences, and the children's charter must be drawn into the activities of government and of social institutions."

There have been up to the latest reports 35 of these conferences held and definite plans for 3 more are being developed.

Nebraska belongs to this latter group. An organization is being perfected at the present time to study in detail all of the various problems of childhood and infancy as existant in the state and sometime early in 1934 will report the findings and make necessary recommendations.

In order that this work may be successful, complete and full support of the public is needed.

The purpose of the conference is not to supplant the home as the true center of child training but to help the neglected child, and to help parents in their difficult tasks.

Some problems require community effort for proper solution, such as the development of proper educational facilities, provision for the defective child, medical supervision of schools, eradication of infection, and thorough education of nurses, physicians, social workers, teachers and others whose life work is with children.

All of these are community problems and must be solved by community effort.

—Clyde Moore, Omaha.

A HEART TO HEART TALK ABOUT ILLUSTRATIONS

For about a dozen years, *The Nebraska State Medical Journal* furnished three copper half tone cuts free to any article if illustration seemed desirable. This has been quite an expense to the Journal Fund when it is considered that half tones of such size as we use, average in cost about four dollars each. In an endeavor to economize the publication board decided on using zinc etchings, but a trial in the April number (pages 145 and 146) proved disappointing.

The *Journal* will, therefore, go back to copper half tones, but will limit the number of cuts furnished free to any article to two. In addition the editor will reserve the right to publish any article without cuts, if in his judgment he feels that the illustrations will not materially assist in elucidating the text. "We must count the pennies."

PHYSICIANS AND COMMODITY BARTERING

During the winter just past most physicians in rural Nebraska and in the cities as well have learned the not altogether unwholesome lesson of getting along with little money. Barter in commodities has become a recognized procedure and many a man, physician and layman, could hardly have withstood the winter without this method. We know of a physician of thirty years of practice and considered prosperous, who stated he had not purchased a dollar's worth of coal the past winter, but burned wood furnished him on account; the family had taken in trade two hogs and a beef, much of which the thrifty housewife canned for future use; eggs, chickens, butter, milk and cream are furnished them regularly on account. Such an example could be duplicated many times within the writer's personal knowledge. Necessity is the mother of invention and shows that we can adapt ourselves to conditions—that the physician is equal to the emergency.

During and following the wartime boom we became positively extravagant and the trying period through which we are passing may have a wholesome lesson for all.

While preparing this article the following clipping from Illinois came to our notice, and convinces us the problem is more than state-wide:

> "Dr. William F. Hager, Pana physician, who 10 days ago began a 'barter liquidation' of his old accounts, extending over a period of 10 years, checked up today and found that he had received the following:
>
> "Six cords of wood, a cow, six hogs, 300 bushels of oats, 200 bushels of corn, 500 bushels of wheat and a large supply of poultry, eggs and produce. He agreed to write off the accounts which debtors could not pay."

POSTGRADUATE COURSE OF UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE

The University of Nebraska College of Medicine will offer its usual Postgraduate Course from May 15 to May 20, inclusive. This will be the week preceding the annual meeting of the Nebraska State Medical Society in Omaha, and it should be convenient for you to attend that meeting May 23, 24 and 25.

The course this year will be offered under the auspices of the Departments of Medicine, Neuro-Psychiatry and Dermatology.

The laboratories, especially the Departments of Anatomy, Pathology and Bacteriology, will be available for use at all times, likewise the library. The fee for this course will be ten dollars ($10) and the number accepted will be limited to thirty. Address all communications to the Dean's Office.

ANNUAL MEETING NEBRASKA ACADEMY OPHTHALMOLOGY AND OTO-LARYNGOLOGY

The Nebraska Academy of Ophthalmology and Oto-Laryngology will hold their Twentieth Annual meeting at the Omaha club, Omaha, Monday evening, May 22. Dr. A. G. Pohlman of the University of South Dakota will be the guest of the society. Dr. Pohlman is a physiologist and has been doing research on deafness for a number of years. He is a pleasing speaker and has a practical message on the diagnosis and treatment of deafness.

All members of the Nebraska State Medical Association interested in this subject are invited to attend.

DR. JOHN BUIS HONORED BY HIS NEIGHBORS

To the lay press is due credit for the following notes:

> "Dr. John Buis of Pender was the honor guest at a local Chamber of Commerce banquet, March 20. The banquet was served by the guild of the Presbyterian church. Besides the Pender men who spoke of the good work of Dr. Buis, there were present Dr. H. W. Francis of Bancroft, Dr. Lucien Stark of Norfolk, Dr. Morris Neilsen of Blair, Dr. F. W. Murray of Omaha and Drs. J. C. Kildebeck and Dan Tighe of Emerson who talked of the high esteem in which Dr. Buis is held in the medical profession.
>
> "During the twenty-five years practice in Pender and vicinity Dr. Buis has built a hospital with seven rooms for patients, an operating room with modern equipment and a nurse's room. He has treated 20,000 patients. Of these were 1,100 confinement cases, more than 700 surgical cases and more than 400 fractures. During an epidemic of diphtheria, he treated 125 positive cases without a death. He spent a year and a half in the World war, ranked captain in medical corps and worked in every branch of the medical department. When he first arrived in Pender, he organized the first football team and trained them until they became champions of northeast Nebraska."

OUTSTANDING PIONEER OBSTETRIC EXPERIENCES—PATHETIC, HUMOROUS

INSTRUMENTAL DELIVERY ON A TEPEE FLOOR IN A RAINSTORM

This case takes us back to 1896, before we had lysol, pituitrin, flash lights, automobiles and good roads and when we used chloroform more and ether less.

An Indian appeared at my office with a note from Dr. Susan Picotte, then the tribal physician of the Omaha Indians, asking me to attend to the man's wife, who, she said, had been in labor four days.

We started about 4 p. m. and arrived about 9 p. m., just before a storm that had been gathering in the west broke in all its fury—rain and wind. I found the patient in a tepee on the floor. She was about 25 years old and a primipara. As I entered the tepee an Indian medicine man, who had been looking after the case, raised a flap of the tent on the opposite side and disappeared. On the ground stood a cracker box with a small lighted kerosene lamp on it. The patient was on a blanket spread on the floor. Two stakes had been driven in the ground against which lay a post about 6 inches in diameter which was used as a brace for her feet. Another stake with a rope tied to it was used to pull on. This she had used for four days to help herself.

I noticed several drawings with different colored chalk on the inner walls of the tepee representing things like turtles, snakes and lizards which the medicine man had made and when she complained because the baby did not come he would draw one of them and tell her it was the cause; then he would take his rifle and shoot through it and tell her now she would be better. This had gone on four days.

I had some water brought from a nearby creek. As I could not boil it I had to strain it through cotton and sterilize it with creolin, to prepare my hands for examination. This was before rubber gloves came into use. The swollen condition of the external parts made it very difficult to make an examination. I was able to make out what I diagnosed as a transverse shoulder presentation. She was so tender and swollen that I resorted to external manipulation and was finally able to rotate the head into the pelvis and decided to do a high forceps delivery and this brought more trouble for I had to give her an anaesthetic all alone, for no Indian man will stay by his wife in her travail.

The wind was continuously blowing out the lamp while I was either administering the anaesthetic or trying to introduce the forceps. I would relight the lamp, give more anaesthetic, then hurry to introduce the forceps; then to relight the lamp, when to add to my troubles, a drop of water came through a hole in the teepee where the medicine man had shot, struck the lamp chimney and broke it.

This left me in the dark to the finish. I was finally able to deliver a full term baby that had been dead for several days and macerated as the condition of the skin indicated. I left cotton, and gauze for pads and creolin for a wash and told her how to use it. I expected her to die for she was in terrible condition. I told her to send her husband for me in several days for I did not know the trail of 18 miles on the reservation.

There was a lull in the storm and I thought best to get home again. Hunting for my guide I found him sitting by a tree soaked through and so drunk he could hardly stand up. I helped him on his horse and we started, but were soon in the midst of another storm with wind, rain and lightning and my guide, owing to his intoxicated condition, lost the trail several times, but he got me home after daylight, wet, tired, hungry and sleepy.

The husband never called again and I naturally supposed she had died, but to my surprise in just 14 days she appeared at the office, thanked me for what I did for her and paid me.

Contrast this with the present hospital facilities, where two doctors and three nurses would take charge of the case.

—**H. W. Francis**, Bancroft.

ALLERGY HINT III

Scratch tests are especially applicable in children, and intradermal tests for adults. But neither should be used to the exclusion of the other.

—**Edw. S. Maloney**, Omaha.

TUBERCULOSIS HINT VII

Many people with minimal tuberculosis tell the doctor that they "feel good." In fact, they insist upon their statement that they feel good so conspicuously, that it becomes suspicious. They are overcompensating psychologically for the fact that they do not feel well.

—**Miles J. Breuer**, Lincoln.

MEDICO-LEGAL DISABILITIES IX

In the consideration of an injury of a claimant in which intentional force is applied with the consent but there is ignorance of a material fact, in the situation surrounding the application of force, "ignorance of the material fact" is the deciding element, upon which the question of accidental cause must be decided.

—**Czar Johnson**, Lincoln.

EDITORIAL PARAGRAPHS

The "Camel" ad appears in this number.

Looks as though Eleanor may soon eclipse Franklin D. in the lime light.

The *Illinois Medical Journal* suggests that the Doctor is the real "Forgotten Man"—and who will dispute the suggestion?

Wolgemuth is quoted as aptly saying: "Darwin discovered the descent of man; Freud discovered that there is no decent man."

We republish in this number McDowell's report of the first ovariotomy as a historically interesting case report. See page 186.

It is stated that approximately 25% of adults have gallstones and that approximately 40% have disorders of the biliary system.

A meeting of the Nebraska Section, American College of Surgeons, planned for the early part of this year, had to be abandoned on account of the economic stress.

In 1890, the death rate in the United States and Canada was 19.6; in 1900, 17.8; in 1905, 16; in 1910, 15; in 1915, 13.6; in 1920, 13.1; in 1925, 11.8; and in 1930, 11.3.

Owing to economic conditions Louisiana has indefinitely postponed its annual spring meeting and Ohio for the same cause has postponed the annual spring meeting to September or October.

The third issue of *"The Hebrew Physician"* (Harofeh Hoibri), the only Hebrew Medical Journal published outside of Palestine, edited by Dr. Moses Einhorn, has just made its appearance.

The Omaha Dermatological Society recently elected Dr. Alfred Schalek, president, and Dr. Donald J. Wilson, secretary (reelected). This society meets the first Tuesday of each month from October to April, inclusive.

A new law has been enacted in Nebraska providing that insurance companies may write life insurance up to $5,000 without a medical examination. This is a rather drastic measure and time will tell whether the policy is justified.

Notices have recently been received from a number of state medical journals asking that changes of address be made. Presumably this means that the economic stress has forced them into quarters offering a cheaper rental. Even medical journalism has its troubles.

A Nebraska physician convicted of driving his car on the public highway while intoxicated, appealed to the supreme court with the result that the higher court affirmed the conviction, which means a sentence of thirty days in jail and revocation of driver's license for one year.

It is now claimed that a Canadian surgeon, Groves of Fergus, did an appendectomy as early as July, 1873. It has been generally stated that Morton of Philadelphia did the first appendectomy in 1888 and that the operation as a recognized procedure dates from McBurney's classical paper published in 1889.

The Vienna Medical faculty disclaims responsibility for the medical testimonials favoring Fleischman's yeast preparations broadcasted by certain American magazines. Investigation proved that no member of the Board of Professors had given such testimonials, but that seven privatdozents (unofficial teachers) were the guilty parties.

Announcement is made that Sir Henry Dale, Director of the National Institute for Medical Research of England and one of the world's leading authorities on Pharmacology, was principal speaker at the dedication of the new Merck Research Laboratory, New Jersey, April 25th. The Merck Research Laboratory, just completed at a cost of $200,000, is considered one of the most modern of its kind in the world.

The Mid-Western Section of the American Congress of Physical Therapy will conduct a one day scientific program on Monday, May 15th, at the Hotel Jefferson, Peoria, Illinois. This immediately precedes the annual meeting of the Illinois State Medical Society which commences on May 16th. A splendid program has been arranged. The medical profession is cordially invited. There will be no registration fee.

The Nebraska Tuberculosis Association, as a part of a nationwide movement, has started an early diagnosis of tuberculosis campaign and has recently sent over the state 20,000 pieces of literature to doctors, nurses and the local tuberculosis association's committees. Through these this literature will be distributed through the field where the most good can result. The state general chairman for this campaign is Dr. John F. Allen, of Omaha.

Jogging your memory—The annual meeting of the Nebraska State Medical Association will be held at the Fontenelle Hotel, Omaha, May 23, 24, 25. The Entertainment Committe for the meeting is as follows: Dr. M. C. Howard, chairman, Omaha; Dr. A. F. Tyler, chairman of Exhibits; Dr. E. L. MacQuiddy, chairman of Banquet; Dr. J. F. Langdon, chairman of Hall and Special Rooms; Dr. J. F. Kelly; Dr. R. W. Fouts; Dr. R. Luikart; Dr. Herman M. Jahr.

By the passage of the Celler-Copeland medicinal liquor bill and its approval by the President, the law restricting prescription by physicians of liquors for medicinal purposes has been repealed. The law as it now reads provides that "no more shall be prescribed to any person than is necessary to supply his medicinal needs." The sound judgment of the attending physician is to govern. This law, however, does not apply to Nebraska and some other states in which the prescription and dispensing of liquor is absolutely prohibited by state laws.

A letter from an official of the Woman's Auxiliary is so humanistic and full of good sense we quote part of it here. Referring to the State Medical and State Auxiliary meeting, she says: "I hope we will have a good meeting. All we need now is attendance. After all, good old hospitality plays an important part in any convention, as many a good inspiration has come from those pleasant contacts. * * * I feel that I am a part of an organization which is doing its bit in assisting a profession which we have every reason to believe, as a whole, maintains a higher character than any other profession in the world—men and women of courage, mental alertness and understanding. May we ever prove worthy of this confidence."

NECROLOGY

Robert P. Hoxey, Beatrice, Nebr.; native of Mason, Ill.; University of Illinois College of Medicine, 1901; in practice successively at Storm Lake, Iowa, Couer d' Alene, Idaho; Valentine and Red Cloud, Nebr. (at the latter place from 1914 to 1924; for the past nine years physician and lately assistant superintendent of the Beatrice Institution for the Feeble Minded; died suddenly March 23, 1933, aged sixty-three years. A widow, two sons and a daughter survive. Interment from the family home at Red Cloud.

William H. Nelson, Ruskin, Nebr.; University of Illinois, 1910; practitioner at Ruskin for 23 years; prominent in all medical and civic activities; officer in Hospital Corps U. S. Army during the Spanish war, serving in Cuba and the Philippines; member Nebraska State Medical Association; died February 25, 1933, aged fifty-nine years. A widow and mother survive.

Emmett L. Robinson, Lincoln, Nebr.; retired; College of Physicians and Surgeons, Keokuk, 1878; in practice in Nebraska forty-two years—at Silver Creek, Central City, Gibbon, Clarks, Oakdale and Ithaca; sometime member Nebraska State Medical Association; died April 10, 1933, aged eighty-two years. A widow, daughter and three sons survive.

Arthur P. Ginn, Hollywood, Calif.; native of Ohio: University of Vermont College of Medicine, 1883; practitioner at Nebraska City for almost thirty-five years from 1896 to 1930, when ill health compelled retirement; a man much devoted to his profession and a strong character; former member Nebraska State Medical Association until his removal to California two years ago; died after an attack of apoplexy, April 4, 1933, aged seventy-two years. A widow, daughter and son, survive.

George W. Fegers, Nebraska City, Nebr.; native of Iowa; Keokuk Medical College, 1896; one of a family of physicians, his father and two brothers having followed the same profession; practitioner at Nebraska City since 1912, about twenty-one years; principal worker in the establishment of the hospital at Nebraska City; sometime a member of the medical staff of the Modern Woodmen and helped found the Woodmen Tuberculosis Sanitarium near Colorado Springs; member, Nebraska State Medical Association; died of angina pectoris, April 1, 1933, aged fifty-nine years. A widow, son and daughter survive.

Byron B. Davis, Omaha, died April 19. (Obituary in June number).

"A certain girl is so dumb she thinks 'no kidding' is a slogan for birth control."

MRS. CLYDE A. ROEDER,
President, Woman's Auxiliary Nebraska State Medical Association

TUBERCULOSIS ABSTRACTS

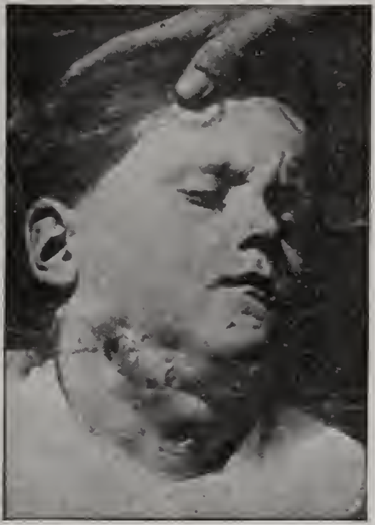
PULMONARY TUBERCULOSIS AND SYPHILIS

Deaths from syphilis rank high: in England 10 per cent, in France 16 per cent, in the United States 17 per cent, of the total mortality can be traced to syphilis. On the other hand a study of a group of uletic patients in Germany indicated that 26.67 per cent of them died of tuberculosis against 22.5 per cent dying of syphilis. Similarly, in Finland of 734 syphilitic patients, 25 per cent died of tuberculosis while only 15 per cent died of syphilis. Post-mortem examinations of 500 cases of syphilis showed that the cause of death was tuberculosis in 10.6 per cent of cases. These and other statistical studies and clinical observations indicate that syphilis hastens the progress of tuberculosis.

Because of the frequent coexistence of tuberculosis and syphilis, it is important that a careful search be made in tuberculosis patients for evidences of syphilis. This search should include as an important feature, a careful history with repeated questions on subjects which might bring syphilis to light, as for example, history of primary sore, rashes, miscarriages and family histories. At the Queen Elizabeth Sanatorium in Budapest, only 1.7 per cent of the tuberculous patients having syphilis gave a clear history of this disease, while the total number found to have syphilis on the basis of history, and serological and clinical examinations was 9.3 per cent of all the patients in the sanatorium. It is desirable to examine the blood of the tuberculous patient routinely at least once and preferably oftener and to employ two tests as for example the Wassermann and one of the precipitation tests, bearing in mind always that the blood test may be negative even in the presence of syphilis. Orszagh does not think it necessary to examine the spinal fluid in the majority of cases, a judgment with which the reviewer does not fully agree.

SIMILARITY OF SYMPTOMS AND LESIONS

A good many luetic conditions are mistakable for tuberculosis. Thus, there may be general systemic manifestation in early syphilis such as loss of appetite, paleness, raised temperature, headache, chest pains, gastric disturbances and jaundice, symptoms which resemble those of tuberculosis. In the secondary stage of syphilis patients may suffer from bronchitis and sore throat. Usually the lymphatic nodes are enlarged especially those of the groin and neck, and enlarged hilar lymph nodes are not rare in syphilis. Chronic syphilitic skin lesions and chronic syphilitic laryngitis are occasionally mistaken for tuberculosis. Pulmonary syphilis can cause alterations of lung tissue quite similar to those of tuberculosis. Disseminated gummata may resemble miliary tuberculosis, ulcerated gummata may resemble cavitation of tuberculosis. Histologically the lesions of pulmonary tuberculosis and of pulmonary syphilis may be indistinguishable. It is to be borne in mind that the two diseases may be present in the lung at the same time.



GUMMATOUS LYMPH NODES
(Congenital Syphilis)
Cases such as the one illustrated above are sometimes mistaken for tuberculosis.

Simple pulmonary syphilis does not occur so often as the clinicians and roentgenologists diagnose it. Neither is it so rare as the pathologists at present take it to be. The diagnostic difficulties are to be overcome only by exact systematic clinical, serological and X-ray examinations. Special significance is attributable to negative sputum, positive Wassermann, characteristic history and the good effects of anti-luetic treatment in arriving at a working diagnosis of pulmonary syphilis.

SYPHILIS DELAYS CURE OF TUBERCULOSIS

Tuberculosis at the Queen Elizabeth Sanatorium gave in general a graver prognosis in the presence of syphilis. The longer the intervening period between the outbreak of the two diseases, the less harmfully does lues influence the course of tuberculosis. In judging the effect of syphilis on tuberculosis, it is important to know what the condition of the lung was when syphilis was acquired and whether it has become worse. If the pulmonary lesions are old and healed, or if the patient is in good condition, syphilis as a rule does not affect this condition. But in the case of badly nourished old persons with little capacity for reaction, syphilis can attack the system to such an extent that the latent tuberculosis may be reactivated and become fatal.

In the same way, aggravation may follow fresh luetic infection in the case of persons whose lung trouble was extensive, but which had only showed slow progress till then. If a person suffering from active tuberculosis acquires fresh luetic infection, and his bodily resistance is weak, then the illness may have a very serious course, though it is also possible that the disease may later calm down and the prognosis become more favorable. Persons suffering from antecedent lues may react to fresh pulmonary tuberculosis infection just as healthy persons would. Tuberculosis becomes fatal only if the lues causes lesions which disturb the working and vitality of the whole body, as for example cardiovascular lesions.

TREAT SYPHILIS WITH DISCRIMINATION

In the case of pulmonary syphilis the treatment of syphilis should be energetic. In the case of pulmonary tuberculosis complicated by syphilis, the treatment of syphilis should be cautious. In the choice of correct doses, the patient's general condition and the character of the pulmonary lesions are extremely important factors. With a weakened constitution, and active recent and exudative tuberculosis, the treatment of syphilis should be delayed until the general tuberculous condition has improved and it should then begin with small doses of bismuth. In the presence of fibrous pulmonary lesions syphilis may be treated safely with larger doses of bismuth, and neoarsphenamine may be used in moderate doses beginning with .15 grams and going up to .45 grams. Surgical treatment of tuberculosis is not barred by the presence of syphilis provided anti-luetic treatment is administered.

Pulmonary Tuberculosis and Syphilis, Oscar Orszagh, Tubercle, January, 1933.

THE SOCIETIES

A regular meeting of the **Omaha-Douglas County Medical Society** was held March 14, with President Riley in the chair.

Dr. J. W. Duncan read the first paper on "Present Trends of Medical Practice," covering the economic angle.

Dr. James Kelly presented further details, illustrating with lantern slides the important recommendations of the Committee on the Cost of Medical Care as they affect medical economics.

A motion was duly made and seconded that the Society adopt the motion approved by the Council, as follows:

"Until such time as the Medical Society feels justified in offering a plan involving changes in the practice of medicine, this Council strongly condemns any practice on the part of the members or officers of the Omaha-Douglas County Medical Society in engaging in any form of contract practice now being sponsored or promoted by profit-seeking interests, with attempted direct solicitation of patients."

Dr. J. F. Langdon made the following motion: "I move that it be the sense of this Society that if any officer of the Society goes into any group insurance plan not approved by the Society, he will be expected to resign from office."

A regular meeting of the **Omaha-Douglas County Medical Society** was held March 28, with president-elect Dr. H. B. Hamilton in the chair in the absence of President Riley.

Dr. A. D. Dunn read the first paper on the scientific program. His subject was "Secretory (Renal) Anuria—Treated by Decapsulation." This was discussed by Drs. Brown, Summers and Keegan.

The second paper was presented by Dr. F. W. Niehaus and his subject was "Coronary Circulation in Health and Disease." This was discussed by Dr. Dunn.

A case report "Krukenberg Tumor," illustrated by lantern slides, was presented by Dr. C. H. Waters.
—Abstracted from The Bulletin.

At a meeting of the **Omaha-Douglas County Medical Society,** April 11, members of the University hospital staff put on the program:

Dr. E. L. MacQuiddy spoke on the benefits of air conditioning in hospitals and homes. He described the use of air conditioning by filters in relieving various types of hay fever.

Dr. O. J. Cameron discussed self-induced lesions and described the means taken by individuals to procure a skin lesion in order to evade some unpleasant circumstance hoping to fool the physician.

Dr. M. Grodinsky gave an illustrated talk on his experimental and clinical studies of "Spinal Anesthetic." Dr. A. J. Brown spoke on "Pantocine as a Spinal Anesthetic." The latter two talks were discussed from the floor by Dr. J. W. Duncan, Dr. E. C. Henry and Dr. MacQuiddy.

The **Hall-Merrick-Howard County Medical Society** met at Grand Island, March 30. Dr. C. C. Tomlinson, Omaha, discussed "Common Errors in Diagnosis and Treatment of Skin Diseases." Much discussion from the house followed.

The **Tri-County Medical Society**—of Dodge, Washington and Burt counties, held a meeting at Blair, March 27. A feature of the meeting was a dinner served in the Episcopal parish house by girls under fifteen.

Dr. H. W. Bensen, Oakland, spoke on "Tuberculosis Clinics"; Dr. C. G. Moore, Fremont, on "Fractures", and Dr. Lucien Stark, Norfolk, on a "Classification of Albuminurias."

The Tri-County Medical Society was organized two months ago and the officers of the Dodge county medical group were carried over as the officers for the new organization.

Twenty-five members of **Otoe County Professional Society** heard two Lincoln doctors speak on arthritis and tumors at the March meeting at St. Mary's hospital, Nebraska City.

Dr. John C. Thompson gave a paper on "Arthritis With Reference in Treatment to Crowe's Vaccine." He discussed in detail atrophic and hypertrophic arthritis, explained symptoms and treatment. Subject of Dr. C. C. Hickman was "Tumors of the Colon With Special Reference to Multiple Polyposis." Dr. Hickman gave a case history, described treatment and operation to a patient. Dr. C. G. Zimmerer and Dr. T. L. Weekes of Nebraska City presented a case history of "Abscess of the Brain."

The papers were discussed at length. Dr. Roy Whitman, surgeon, Lincoln, gave a comprehensive discussion on Dr. Hickman's paper.

The **Webster County Medical Association** held a meeting in the Hotel Royal, Red Cloud, March 26, there being covers laid for twelve. After the enjoying of a delightfully served dinner, a business meeting was held by the doctors while their wives attended the matinee at the auditorium.

The spring meeting of the **Third Councilor District Medical Society** was held at Beatrice, April 13, featuring a program of unusual interest, and was enthusiastically received by the forty-five physicians present:

2:30 P. M.—A Symposium on "Benign and Malignant Lesions of the Cervix and Uterus." H. P. Kuhn, M. D., Ferdinand C. Helwig, M. D., Edward H. Skinner, M. D., surgeon, pathologist and radiologist, respectively, St. Luke's hospital in Kansas City, Mo.

5:00 P. M.—"Prostatectomy and Prostatic Resection." Edwin Davis, M. D., University hospital, Omaha, Nebr.

6:30 P. M.—Dinner at Hotel (75c).

7:30 P. M.—"Chronic Paranasal Sinus Pathology Diagnosis From a General Practitioner's Viewpoint." W. P. Wherry, M. D., University hospital, Omaha, Nebr.

8:30 P. M.—"A Heart Clinic." Conducted by Adolph Sachs, M. D., president-elect Nebraska State Medical Association, and Carl B. Russum, M. D., Creighton University, of Omaha, Nebr.

The April meeting of the **Otoe County Professional Society** was held at Nebraska City on the 10th, preceded by a dinner at the Grand hotel. Dr. Ferdinand Greiss, Lincoln, dentist, spoke on "Oral Sepsis"; W. O. Colburn, Lincoln, on "Nutritional Disorders and Infant Dietary"; Dr. E. S. Wegner, Lincoln, on "Gleanings From Recent Pediatric Literature.'

HUMAN INTEREST TALES

Dr. J. L. Pennington, Thedford, was reported ill recently.

Dr. J. D. Reid, Pilger, made a trip to Kansas City last month.

Dr. M. C. Howard, Omaha, underwent an appendectomy in March.

Dr. L. J. Owen has been named president of the Lincoln Optimist club.

Dr. and Mrs. R. A. Davies, Arlington, spent part of the winter in Florida.

Dr. J. H. Downing, and wife, Rising City, have gone to California for an outing.

Dr. and Mrs. E. C. Henry spent a short time at Hot Springs, Ark., in March.

Dr. I. C. Munger, Sr., Lincoln, underwent an operation on his stomach recently.

Dr. Margaret Koenig was recently elected president of the Waterloo Woman's club.

A million volt x-ray apparatus has been installed in the Lincoln General hospital.

Dr. N. H. Blakeley, Wahoo physician, was a patient in an Omaha hospital in March.

Dr. Mary L. Cotton, Detroit, Mich., visited her sister at Madison in early spring.

Dr. A. E. Wanek, Loup City, submitted to an operation in an Omaha hospital, early in April.

Dr. G. A. Young, Norfolk, talked to the local Woman's club on "Diphtheria," at a recent meeting.

Dr. C. L. Philips, Superior, suffered severe injuries in an auto collision in a snow storm in late March.

Dr. Harry Hapeman, Minden, gave a talk on Alaska before the local Parent-Teacher Association, recently.

Dr. Jennie Callfas, Omaha, was elected president of the local Woman's club recently, for the third time.

Dr. and Mrs. E. C. Foote, Hastings, attended the Pan-American Medical Congress at Dallas, Texas, in March.

Dr. Rea Buchannan, former Lincoln physician, has been appointed an assistant at the Beatrice Institution for the Feeble Minded.

Dr. R. P. Carroll, Laurel, gave a talk on "Mental, Moral and Physical Health" before the Belden P. T. A., the middle of March.

Dr. A. R. Knode, Omaha, was a visitor at Long Beach at the time of the earthquake and had some hair-raising experiences and observations.

Dr. Perry Allerton, for some years in practice at Tilden in association with Dr. C. C. Barr, has located at Elgin, Ill. He will be surgeon for the Davis Cook Publishing Co., and will also engage in local practice.

BOOKS REVIEWED

THE COST OF MEDICAL CARE, a Summary of Investigations on the Economic Aspects of the Prevention and Care of Illness, by I. S. Falk, Ph. D.; C. Rufus Rorem, Ph. D.. C. P. A.; Martha D. Ring. With foreword by Ray Lyman Wilbur, M. D., Chairman of the Committee. 650 pages. Price $4.00. The University of Chicago Press.

This is the summary of five years of scientific investigation of the Committee on the Costs of Medical Care. It is a resume of the 26 volumes of publications on specific aspects of the prevention and care of illness which have preceded this volume.

Whichever way one leans on the problem studied, every physician should read this volume carefully.

BOOKS RECEIVED

THE INCIDENCE OF ILLNESS and the Receipt and Costs of Medical Care Among Representative Families. Experiences in Twelve Consecutive Months During 1928-1931. By I. S. Falk, Ph. D., Margaret C. Klem, Nathan Sinai. D. P. H. Three hundred thirty-four pages. Price $3.00. The University of Chicago Press.

THE ABILITY TO PAY FOR MEDICAL CARE, by Louis S. Reed, Ph. D. 107 pages, price $2.00. The University of Chicago Press.

BAD BUSINESS

"This place has a healthy climate—except the doctor, nobody has died for five years."

"What did the doctor die of?"

"Starvation."—Sondagsnisse Strix, Stockholm.

ACCOUNT OVERDRAWN

Doctor: "This is a very sad case, very sad indeed. I much regret to tell you that your wife's mind is gone—completely gone."

Mr. Peck: "I'm not at all surprised, doctor. She's been giving me a piece of it every day for fifteen years."

AT HIS LEISURE

Doctor: "Give up smoking, captain, and you will prolong your life by 20 years."

Captain: "But isn't it too late now?"

Doctor: "It's never too late."

Captain: "Then I'll start in ten year's time."—Passing Show.

CARE OF THE PATIENT

The term art of medicine cannot be satisfactorily defined. For the purpose of this discussion James D. Heard, Pittsburgh (*Journal A. M. A.*, May 31, 1930), applies it to that field of medicine in which the care of the patient is governed primarily by the clinical experience, by the insight and intuition of the practitioner. No rigid distinction as between art and science can ever be drawn, for the scientist is constantly employing art in the carrying out of his investigations, whereas art tends to become self-conscious, to formulate rules of conduct, and so to become scientific. To practice art without science constitutes charlatanism. To practice science without art is to disregard the personality of the individual who seeks relief. He asserts that in the acquirement of the art a knowledge of psychology is of first importance; but, as Dr. Edsall has said, wide reading is far better training in psychology than is any merely formal study of the subject. Nevertheless, many physicians who have been expert in their art have received most of their early training as a result of the lessons of adversity. They have reached port after sailing an uncharted sea where they had to depend entirely on their own efforts. To the physician, his patient must always be a psychophysical entity, not a diseased organ or group of organs. In the presence of organic disease, emotional disturbances may be brought about by the disease itself, while emotions in turn may aggravate the disease. Often, because of their lack of any demonstrable disease, sick people are said to have nothing the matter with them. But in these cases social readjustment, lightening an overload of responsibility, judiciously applied psychotherapy and other methods of medical treatment may effect cures. The care of these patients will not be successful unless the entire history is known. Such a history is often difficult to obtain. It is necessary to break down certain natural reticences which may lead a patient to guard his statements or even to misrepresent the facts. The history must be taken by the clinician himself. If the care of the patient is to be successful, he must have confidence in the physician. Yet confidence in the physician will be misplaced unless it is founded on an appreciation of his honesty of purpose, of his adequate knowledge of the science and of the art of medicine. The possession of these qualifications is readily apprehended. Confidence may be shaken by a tendency on the part of the physician to show impatience, to appear abstracted during the hearing of an oft-told tale or to exhibit untimely levity; by his obvious vacillation of purpose, by gossip about his other patients or by unkind criticism of other physicians. It may be lost as a result of his failure to warn the patient before the infliction of pain, or to prescribe a placebo to the man who has great faith in the value of drugs; by his refusal, or even by his manifest reluctance, to call another physician in consultation. Confidence is not necessarily lost because of an inability to provide a diagnose. The clinician often fails to realize the degree of influence which prognosis may exert. This influence affects the patient favorably or unfavorably in exact proportion to what he believes that the physician thinks. A chance word may appear to have a profound significance which is then transformed into terms of emotional and functional readjustment. To avoid doing harm, the physician must be always on his guard, nor should he be deceived by the cunningly concealed traps set for him. In arriving at a prognosis, the clinician must be guided, of course, by the past experience of himself and others. He will remember patients who have recovered, although for a time the outcome appeared hopeless. The physician must also bear in mind the fact that errors in diagnosis are frequent. But if the facts are known and it is certain that the outcome of the case must be disappointing or even disastrous, the problem as to how much the patient may be told must be solved in the light of the physician's knowledge of that patient's personality. In any case, "the physician should commit himself only when he must." Quite independently of an unfavorable prognosis, the physician may injure his patients by exciting fear. Fortunate is the physician who has a cheerful countenance or at least what has been called "a poker face." If patients suspect disease of the circulatory organs, they are peculiarly fearful. Before estimating blood pressure, it is advisable to request the patient not to ask for the results. Usually, he will acquiesce if the reasons for the request are explained to him. Under such conditions, dictation of numerals should be expressed in terms of a code. Operations on neurotic people should be advised only after most careful consideration of all the evidence. To avoid harm, the clinician must realize several facts: that unpleasant symptoms of nervous origin are often referred by the sufferer to concealed organs; that the results of the operative drive are often disastrous; that the removal of supposed infective foci is useless if the harm has already been done; that the fact that a patient is a poor operative risk may be shown only as a result of careful study of the individual; and that, in spite of such study, the after-results may show the final judgment to have been wrong. Hurtful suggestion may be implanted through giving the patient too much information. Many people who are ill are harmed by being placed in hospitals, especially in such as are known to specialize in the treatment of mental diseases, or those with such names as Charity Hospital, Cancer Hospital, Home for Incurables, Home for the Friendless. Sometimes, over-restriction of a patient's activities may be more detrimental than the activities themselves. A little golf, an occasional trip to Europe, a moderate use of tobacco—all these may affect him favorably. Even allowing a patient to sit up in a chair may put him in a more hopeful state of mind. Psycho-analysis, when resorted to, is often best employed by the family physician. The mind of the patient must be diverted from his symptoms, but the physician must do more than amuse. He must supplant harmful emotions by those that are helpful. Through his prognosis and his own apparent cheerfulness, moreover, he must give the patient confidence. He must set an example of high-mindedness and courage. He must be able to accept criticism with equanimity. The physician must realize that the patient desires and requires personal attention; that he desires active treatment and is disappointed when he receives only diagnosis. The ultimate survival of the private practitioner will depend largely on a realization by the profession of the patient's demand for personal service and that the art of medicine is in its essence completely personal. In conclusion Heard says: The lives of all who enter the practice of medicine will be full of toil and anxiety. We can have no engagements which may not be broken. Our lives can never be wholly our own, but even the busiest of us can escape now and then into secret places. There we can enjoy friends, the sweet fellowship of books, the delight of music, the companionship which a garden gives. With Fra Giovanni we can learn that "no peace lies in the future which is not hidden in the present little instant." We take peace. We know that "the gloom of the world is but a shadow. Behind it, yet within our reach, is joy. There is radiance and joy in the darkness, could we but see; and to see, we have only to look." We look. Courage and self-reliance become ours, for we discover that in caring for his patient the physician may become as "a hiding place from the wind and a covert from the tempest: as rivers of water in a dry place: as the shadow of a great rock in a weary land."

POWER OF GOLD

"Is the doctor treating her for nervousness?"

"Oh dear no. She's rich enough to have psychoneurosis."—Boston Transcript.

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PRESENT DAY PROBLEMS OF THE MEDICAL PROFESSION*

ADOLPH SACHS, M. D., F. A. C. P.,

President, Nebraska State Medical Association,

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The whole world is facing many serious problems that cannot be solved in a day. Social reforms, unemployment, stabilization of currency, international trade, disarmament, overproduction and public health are only a few of the great questions that all nations must solve before our present chaotic state can return to normal, or to a pre-war level.

History tells us that turmoil has followed every great war, but history has never found the entire world in chaos such as all nations are facing today. The leaders of all countries are earnestly working to solve these great problems, and through faith, trust and tolerance the world will again come to a mutual understanding, so that peace will again reign on earth and prosperity will be restored to all countries.

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*Presidential address, delivered before the annual meeting, Nebraska State Medical Association, Omaha, May 24, 1933.

"Live and let live" is the only solution to any economic crisis. Every man has a right to live and provide for his dear ones in order that law and justice can prevail. This great nation of ours has always mastered gigantic tasks under some great leadership, and at present under the guidance of our new President, and with the faith of our people, the numerous difficulties are shaping their ways to a solution so that normalcy will again reign.

The medical profession plays an important part in the affairs of any nation, because without health, no nation can exist. It is therefore no wonder that during this present critical state the medical profession finds itself facing many conditions that need careful study in order that a proper solution can be obtained. We are all looking for some leader who can guide us out of our present difficulties, but there is no panacea that can cure all ills. Utopia has never existed and will never exist because all types and classes inhabit the earth, hence whatever is best for the majority eventually prevails.

We often expect too much of our leaders in times of stress because frequently we must work out our own solution. The situation in the different localities is in a general sense the same, but each community has its own individual and special problems, which only its own members can solve.

We often hear it said that the American Medical Association should lead the way in matters pertaining in its field; however, if we stop and think we at once understand how impossible it would be for this great organization to entirely solve all of the problems that are at present facing the profession at large. We are all hoping however, that the next meeting at Milwaukee will take some steps toward the guidance of a safe course to follow.

The council on Medical Economics is gathering a fund of information, and thus far no emergency exists to rush in and act hastily. Time may offer its own solution, and as conditions improve, many of our so-called emergencies will take care of themselves.

In this great agricultural state of ours, depression has hit hard because the prices of cattle and grain have yielded far less than the cost of other commodities, but the nation is rapidly realizing that if agriculture does not prosper, the nation cannot prosper, hence food products are the basic exchange in all values, and must be the first to come back or prosperity cannot return. So after all, we are fortunately situated because we are living in one of the most productive states of our Union.

The Nebraska State Medical Association is composed of a fine group of medical men, that will compare favorably with any state in the Union. We do not have millions at our disposal for any great philanthropic research, but what we do have we use well because there is no excess to waste. Our two medical colleges compare favorably with any school in the east, and their graduates can compete with graduates from any school in the country. Our aim is to turn out doctors to take care of the health of the people, and what greater mission is there on this earth?

To solve any great problem, the first principal is cooperation. We have now arrived at a time where petty jealousies must be cast aside and we must solve our problems together. No man is so big that he can stand alone. If he is not willing to help or be helped, he will soon be sidetracked for the passing procession.

We have as fine an organization as any state in the Union, but likewise we need more mutual understanding. We may not like a man personally, but that is no excuse for us not wanting to cooperate with him if he is honest and square. We must adjust our differences and pull together. Competition in medicine is the same as competition in any field, except that at times some of our would-be friends start trouble by telling us "Dr. X. said so-and-so"—which of course immediately kindles the fire and the battle is on. Kindly remember the safety slogan "Stop, Look and Listen". Listen to your colleague before your blood pressure rises and often times you might learn that some statements might be misconstrued or even mistaken. Talk things over sanely, and if a disagreement exists, correct it. We are often the laughing stock of the laity because even though we are an adult educated class, we are infantile in our relationship toward each other. The majority of men may be competitors, but are the best of friends, and benefit by their association. However, the minority can occasionally kindle the spark that can upset the closest friendship. Healthy competition is an inspiration for better work, but dirty competition will never accomplish what the instigator hopes that it might.

Malpractice suits have increased in this State to such a proportion that our group insurance has been cancelled, and insurance rates have increased beyond that of some of our sister states.

One of the reasons is undoubtedly due to the economic stress where someone thinks he may get some easy money. Another reason is due to the fact that people know most medical men are insured and hence the doctor will not have to bear the financial burden. You have never heard of a cultist being sued, have you? Their mistakes are many, but their insurance is nil.

Often times suits are started by some unconscious remark, which may be entirely unintentional, but the same may be the spark that starts the fire. A just claim can always be handled, but a blackmail suit is a damnable insult to the profession as a whole. No blackmail suit can ever progress unless some sinister medical advice is rendered, so let us find out where this advice comes from. Let us be cautious of our remarks, lest we do our neighbor a great harm, often an irreparable damage. Remember that a sharp sword cuts both ways, and we can never tell when we ourselves are next. A kind word or a good deed never failed to reap its reward.

Our Medico-Legal Defense committee is working untiringly to assist us when we are in trouble, and their work is for our benefit, without compensation to themselves; however, their work can be of little avail without our cooperation and help.

Our Medical Legislation committee has functioned excellently, and their efforts have benefited us all greatly. However, we must all remember that occasionally at least, we must sacrifice a little time to offer to them the assistance they might need. The old saying, "Let George do it" is a thing of the past. Let us do our part so that more rapid results can be obtained.

Medical men should not indulge in politics and yet the old law "survival of the fittest" still prevails. The time to know legislators is before they are elected. No one wishes for unjust legislation, and it seems funny that we must fight some of the public in order to protect their health. This has been true for ages and will probably continue to exist. Some mis-informed and misguided people still believe that doctors wish to have a medical trust, and in spite of all effort to the contrary, they cannot be persuaded otherwise. The majority, however, are sane thinking people and through this source proper education may be a wonderful aid, when such is needed. The time has come when every medical man has a public duty and he dare not shirk it.

We now have a wonderful aid in our Women's Auxiliary, which with proper guidance is capable of tremendous possibilities in educational problems of all kinds. Let us give them our assistance and guide them in places where they can accomplish the most good. My first message to them is to help further organize and promulgate fraternal spirit among the profession in both smaller and larger communities. Their educational programs deserve the highest praise and are doing much in enlightening the public on many health problems.

I feel that one of our foremost duties is to encourage all reputable medical men to join our County and State societies, and to see that they do it. Let us make them members, and if we think they are black sheep, we may be able to wash them clean. No sheep can be cleansed by slinging mud, but by careful guidance, a conscientious knocker can be transformed into a good booster. If not, then we know at least that we have tried.

Every Councilor district should have a grievance committee, and its chairman should be the Councilor. We have an excellent group of councilors, but we do not employ their services as often as we should. Again the fact arises that we do not personally "like" so-and-so, but let our little grudge drop so that with his aid and that of a neutral committee, all differences can be adjusted. It is time that we do agree, or the public will elect politicians as our arbitrators, and then it will be just too bad.

The statement that our system of the practice of medicine is antiquated for our present day needs, is merely the brain child of theorists and lay promoters, and not the demands of either the profession or the public. I can truthfully say that no worthy patient has ever suffered from the lack of medical care. No reputable physician ever refused to care for anyone for the lack of funds. Dead beats are saprophytes and may wrongfully accuse some doctor of such an act, but if properly investigated, the truth will always divulge that all physicians gladly perform any duty that confronts them.

Why should the practice of medicine be socialized if other professions and the general business world are not? Let us solve our own difficulties and if any emergencies arise, the profession itself is more than anxious to meet them. State and Insurance medicine as at present advocated by a few, are basically wrong. When you remove independence and ambition from the profession, the wheels of progress will be slowed and systematic advance will be materially hindered.

Our present economic depression is gradually improving and as soon as the unemployment situation is solved, many of our economic issues will vanish. Let us not be hasty in our judgment because it is much more difficult to get out of trouble than it is to get into it.

In this machine era, some of our philanthropic organizations would like to alter our methods of practice so that the greater share of the public could be cared for by a modified group or hospital organization. This they claim would benefit the so-called low salaried class which they feel are being badly cared for. If the same amount of money and time would be expended toward equalizing the salaries of this class, and socializing the business interests that feel that we are wrong, a greater benefit would be derived and the world would profit by the change. Until our whole system of standards is changed in that more humanity and less dollars are the standards upon which we build our foundation, no semblance of a solution can be offered.

Every one will agree that all nations are attempting to accomplish this solution, and when it occurs our present economic stress will be adjusted, so why socialize one of the noblest professions and shackle its progress, which means so much to future happiness and public welfare?

It is claimed that we have an over supply of doctors, and that with our modern methods of travel and improved roads the supply is greater than the demand. Medical Colleges are graduating more students each year than is necessary to meet the public's need. This may be true in this time of economic readjustment, but suppose an emergency should arise like we had during the world war? Then the nation would require even a greater supply of doctors than we have at hand. A doctor cannot be graduated over night, and so it may be wise not to cut down the supply too rapidly until world peace is more of a certainty than it is today. Our future nation depends upon the health and vigor of its manhood.

Medical education may err in some ways, but all of our Class A schools are attempting to correct their curriculi to meet the demand of the day. The medical field has grown so large that no man can be proficient in all branches of practice, but the courses in most schools are being modified so that most graduates, with some added practical experience, make excellent general practitioners. The old method of medical preceptorship would be ideal if it could be properly controlled, but this is impossible.

No individual is equipped to be a specialist without special training. The days of a "six weeks course" in specialization are now a thing of the past. Our profession is rapidly recognizing that we must curtail the so-called specialists that are not really qualified. The old saying that "surgeons are born, not made" may bear some truth but no longer qualifies in its entirety. National and state laws must correct this travesty which now confronts us. Many of the specialties are attempting to correct this evil themselves, and rapid strides are being accomplished toward this end. Some states are also attempting to assist in this most needed change, and in the near future we will undoubtedly be compelled to show full qualifications before posing as specialists. The public has no means of discriminating, and hence we should protect them.

We all recognize that where there are so many quacks and cults, the title of "doctor" carries little prestige, but it is difficult to impose further legislation that might limit their number. I do believe that by further improving our public relationship, we can educate the masses more than we have in the past. Through our social workers and our efficient auxiliaries much could be done to enlighten public opinion and assist in proper education along health measures.

Mass psychology can be used to the benefit and also the detriment of any movement. It is far easier through means of advertising, for some faker to hoodwink the public, than it is to have them follow some sane and sensible teaching. Fortunately, the wares of these charlatans soon fade, because they rarely can deliver half of what they promise. Unfortunately, through suggestion alone, many neurotic individuals improve, and by this means their efforts are given greater significance than the physiological action warrants. We need better legislation to protect the public from these charlatans, but "try to get it"!

I wonder how many people realize that the national health bill was $3,647,000,000 in 1929. This was about 4 per cent of the gross income. Of this, $715,000,000 was spent for medicine. and of that amount, $525,000,000 was spent for self-medication, leaving only $190,000,00 for the doctors' prescriptions. Think of the amount of money that could be saved for the public if this patent medicine industry could be controlled. Likewise, think of the tremendous overcharge that is allowed by the use of patent trade names. If this alone could be abolished, many of the lower wage class could easily budget for medical care. Tobacco, ice-cream, candy and soft drinks cost $3,074,000, which is not much less than the cost of medical care, and yet it is charged that the cost of medical care is exhorbitant. The same year, $7,882,000,000 were spent for automobiles. It is hard for all of us to get back to basic living, but economic stress is teaching everyone that luxuries will not bring happiness, and that health is the real foundation of all happiness.

Our country has been educated to the partial payment plan, which may have some few advantages, but in most instances over-supplies anyone's needs. Many families of the lower salaried bracket are so heavily involved in keeping up payments that very little remains to budget for food or sickness. If this unfortunate system could be curtailed, more equality would occur and less waste would exist.

The radio has been a great advantage to the world, but deplorably as you all know, it has greatly exploited many quacks and quack remedies, but as time goes on, the right thinking public is beginning not only to interest itself in politics, but in medicine as well. Look at the excellent progress that has been made in educating the public about cancer and tuberculosis. With the same endeavor, other campaigns can be conducted.

We as a profession, must pay more attention to the politics of our cities and states, but we must have less politics in medicine. We all look forward to the next meeting of the American Medical Association, and hope that our legislative and judicial council will freely discuss the various problems and offer some sound guidance that the profession as a whole, can follow. Our hospitals and practice need standardization, but over-standardization and unreasonable requirements increase the cost of medical care beyond its real benefits.

The public is accustomed to a new level of living, and likewise has acquired expensive hospital habits. Look at the luxuries and useless extravagances that have become the style for clinics and charity institutions. Is it any wonder that the cost of medical care has risen to higher levels? The medical men have always tried to meet the patient's level, and will continue to do so.

A number of the county societies have contracted for the care of the indigent, and by this means have paid for their societies' expense, and likewise for many educational projects. This is a step toward progress and is a matter to be carefully considered by all.

We have far more hospital beds than are needed for the care of public health, hence some adjustment must be made so that our better institutions can exist. Hospital care is important and must be kept within the reach of all classes of people.

Postgraduate education is a necessity if we wish to keep abreast of the times. Medical periodicals are a wonderful help, but they cannot replace proper teaching. Often times expense involved prevents a man from doing things he would like to do, and so it is the duty of all medical bodies to try and bring medical teaching closer to home. This is being accomplished by the formation of good clinical societies, and some county societies that are attracting the best medical talent of the country. It is no longer excusable for a doctor to say he cannot afford to keep up with the times.

Just because we have acquired our diplomas does not entitle us to a life long lease on them unless some effort is made to try and keep up with the procession so that the public can benefit by our experience. The competition of younger men is so keen that the older men must keep abreast of the times or they will soon be sidetracked and left behind. It would be wonderful if we could absorb experience as readily as we can absorb information, but yet age must have some recompense.

In closing let me again appeal to this great profession of our state to strive to help solve our many problems, and by more frequent association and contacts, abolish all petty differences, so that we can all pull for a common goal. Let mutual understanding insure our greatest happiness.

METABOLISM OF ALCOHOL

H. E. Himwich, L. H. Nahum, Nathan Rakieten, J. F. Fazikas, Delafield Du Bois and E. F. Gildea, New Haven, Conn. (*Journal A. M. A.*, March 4, 1933), point out that the ingestion of 10 cc. of 19 per cent alcohol per kilogram of body weight by human subjects and of 50 cc. per kilogram of body weight by dogs is followed by an acidosis. This acidosis is probably the result of two factors: a relative retention of carbon dioxide and the accumulation of lactic acid. The alkali reserve of the body is diminished because of this accumulation of lactic acid. In patients suffering from the after-effects of overindulgence in alcohol—the so-called hangover—there was an increased content of lactic acid in the arterial blood. The brain, which usually derives its energy from the oxidation of carbohydrate, may nevertheless also oxidize alcohol.

THE USE OF CARBOHYDRATES IN THE DIET AND TREATMENT OF INFANTS*

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PART ONE

CARBOHYDRATE METABOLISM

In order to correctly understand and discuss the subject of carbohydrates in feeding and in the therapeutics of infants, I wish to briefly recall some of the more important facts of metabolism as related to the sugars which I shall attempt to do as clearly and briefly as possible, in order not to presume upon your patience.

We must recall that in whatever form carbohydrate is injested in the food-stuff, whether as complex cellulose or as simple sugar, it can only be absorbed in the form of a monosaccharide.

The salivary secretion contains an active starch splitting enzyme, ptyalin, which is the first enzyme to act on the injested carbohydrate. Some splitting of starches occurs in the stomach, where the action of ptyalin commences this process. Sugars and dextrins that have been eaten as such or that have been split from starches, may be absorbed directly from the stomach, as well as alcohol and other soluble carbohydrates.

The major portion of injested carbohydrates, however, is passed on into the small intestine, where enzymes capable of converting disaccharides into monosaccharides are found. These are three in number—maltase, which converts maltose and dextrin into dextrose; lactase, which converts lactose into dextrose and galactose; and invertase, which converts cane sugar into dextrose and levulose. If carbohydrate is fed in excess, it may be absorbed as such, without conversion into simple monosaccharides, in which state it cannot be used by the tissues, and will be excreted in its original form in the urine. The monosaccharides enter the portal vein after absorption and are carried first to the liver, where the excess of sugar is withdrawn from the blood, and stored as glycogen. The amount of sugar in the circulating blood is thereby kept constant at from .08 to .15%. Recently the average fasting values for new-born infants have been estimated as .083%; for infants under 1 year as .080% and for children from 1 to 13 years as .088%.

When a large amount of carbohydrate is injested and the liver is unable to remove the excess from the circulation, the blood sugar may be increased above normal, hyperglycemia; and if the excess be excreted in the urine we have what is known as "alimentary glycosuria." The amount of sugar necessary to produce alimentary glycosuria establishes the degree of sugar tolerance for the particular sugar and individual. This degree of tolerance varies with the individual infant, and tolerance curves taken from day to day show little uniformity. The tolerance also varies with the type of carbohydrate employed. The lowest tolerance is for milk sugar, while the highest is for starch. This is explained by the longer time interval which is necessary to break down the starch into monosaccharides, the process going on for the four or five hours which it takes for the food to travel from the pylorus to the large intestine. This longer period of absorption allows the liver cells to hold back the excess of sugar and protect the circulating blood from becoming hyperglycemic.

Those carbohydrates which are not absorbed from the small intestines, are liable to undergo acid fermentation. This is caused by the fermentative bacteria always present in the intestine, and there are produced as a result of this process, lactic, butyric, acetic and succinic acids, carbon dioxide, alcohol, and other fermentative products.

Such fermentation occurs normally—to a small degree—and we shall see later what may occur in abnormal conditions. None of the by-products of this fermentation in the large intestine may be considered as toxic products, while putrefaction may lead to protein split products which many have supposed to possess a toxic action. It is said that the characteristic action of bacteria in the small intestine consists of carbohydrate fermentation, while in the large intestine, the bacteria normally present cause protein putrefaction.

We may ask why protein putrefaction does not normally occur in the small intestine as well as in the large. It has been found that the presence of sugar in the small intestine protects the proteins from the action of purtrefactive bacteria. An acid medium is unfavorable to the hydrolysis of protein by putrefactive bacteria, so that the normal fermentation of sugar and the production of organic acids is enough to hold putrefaction in check.

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*Read Oct. 28, 1932, at Fall Clinics, Bryan Memorial Hospital, Lincoln, Nebr.

The question has also been raised as to the necessity for, or function of the bacteria in the intestinal tract. In answer to this question in favor of the necessity of bacteria, it is known that the body contains no enzyme capable of acting on cellulose, which in order to be made possible for absorption must be hydrolized by intestinal bacteria. On the other hand, guinea-pigs have been taken at birth and kept sterile, fed sterile food. and developed normally with no intestinal bacteria. In the natural state, animals in Arctic regions frequently have no bacteria in their intestinal tract.

It has, therefore, been concluded that while the presence of bacteria in the intestinal tract is of no positive benefit, the organism in its development has adapted itself to neutralize any injurious action which their presence might cause.

As has been stated, the sugars after absorption are carried through the portal circulation to the liver. Here they are resynthesized into glycogen and stored as such. We are indebted to Claude Bernard for this important fact which was discovered by him in 1857.

It has been clearly shown that the amount of glycogen in the liver is quickly affected by the intake of sugar in the diet. Glycogen is formed in the liver by monosaccharides such as dextrose, levulose and galactrose. The disaccharides as cane sugar, lactose and maltose and the polysaccharide starches must first be broken down into their constituent monosaccharides before they can form glycogen. Experiments have shown that the subcutaneous injection of lactose or cane sugar had only slight effect in increasing glycogen in the liver, which adds to the proof that the liver cells cannot convert double sugars into glycogen.

Besides the carbohydrates, glycogen may be formed from amino acids derived from protein. These amino acids are first deaminized in the liver and this is followed by the synthesis of the non-nitrogenous organic acid into sugar. Similarly glycogen may be derived from fat, by the conversion of glycerin into sugar.

The carbohydrate stored in the liver as glycogen is again converted into sugar and discharged into the blood whenever needed by the body. This process is known as "glycogenolysis."

The discharge of the glycogen sugar into the blood stream may be influenced by such extraneous phenomenon as strong emotions, increased secretion of epinephrine, acidosis, diminution of the alkali reserve—muscular exercise, starvation, infections and other causes. It is not within the scope of this discussion to go into further detail on this phenomenon of "glycogenolysis."

INFANT METABOLISM

While infants can easily store up an excess of carbohydrate in the form of glycogen, they have little means of using this excess until they begin to crawl or walk. This storage capacity varies greatly with different infants, and the amount of carbohydrate which can be utilized at any moment for the production of energy will depend on the muscle tonus and muscular activity of the infant.

The actual amount of sugar which can be utilized by the infant will differ according to the type of sugar. For instance the infant can completely utilize:

From 3 to 3.6 grams per kilo of body weight of lactose (milk sugar).
7.7 grams per kilo of body weight of Maltose.
8 grams per kilo of body weight of Cane sugar.
5 grams per kilo of body weight of Glucose.

A 10 kilogram baby should, therefore, be able to utilize 35 grams of lactose, 50 grams of glucose, 77 grams of maltose and 80 grams of cane sugar, without the spilling of sugar in the urine.

REQUIREMENT OF CARBOHYDRATE IN INFANT NUTRITION

A certain minimal amount of carbohydrate is necessary for correct body metabolism. Carbohydrate is needed not only for energy requirement, for which it is the most available and economic source, but it is also needed for the metabolism of fat. It has been pointed out, that the rapidly burning carbohydrate, and the slowly burning fat have important inter-relations in metabolism. They have opposite functions, similar to the calcium-potassium relationship in mineral metabolism.

The optimal ratio of carbohydrate to fat is that found in breast milk, which is: 1 carbohydrate to 2 fat. If this ratio be maintained the fat may be increased without danger of ketosis. It has been pointed out that, while fat tends to restrict, carbohydrate favors water retention in the body. It has been thought that fat increases immunity to infection, while a too great proportion of carbohydrate may decrease immunity.

The requirements of young infants for carbohydrate are met almost entirely by sugars. As the child grows older the addition of starch in cereals, vegetables and fruits supplements this early source. The nursing infant receives lactose as his sole source of sugar. The artificially fed child may receive a variety of sugars in his formula. They may be disaccharides; as lactose, sucrose or maltose, or the polysaccharide dextrin, or the monosaccharide glucose. The older infant receives starch from cereals as well as from leguminous and leafy vegetables. Fruits and fruit juices supply dextrose, levulose and sucrose.

Lactose, the sugar occurring in the milk of all mammals, is the sole source of sugar for the entirely breast fed infant and it would, therefore, seem that theoretically, this sugar could be used to best advantage as an addition to artificial formulas.

However, it should be remembered that all sugars before absorption and utilization are converted into dextrose with the exception of the small quantity of galactose, which is needed in combination with fat for the glycolipoids of the nervous tissue. The lactose of the milk is sufficient to meet this special need, it is, therefore, considered unimportant on a metabolic basis, whichever carbohydrate is chosen for additional nutrition.

LACTOSE OR MILK SUGAR

The feeding of lactose tends to encourage the presence and growth of those bacteria which are normally present in the lower intestinal tract of breast fed infants. Lactose is readily fermented by the normal bacterial flora of the infants' intestinal tract, and as it is slowly absorbed, a certain amount reaches the colon so that fermentation with the production of lactic acid occurs throughout the greater portion of the small and large intestines. The absorption of calcium, an important mineral constituent of the tissues may be aided by the presence of those acids due to fermentation of lactose.

SUCROSE (OR CANE SUGAR)

Sucrose which is the sugar derived from sugar cane or sugar beet, is not as readily fermented as lactose, and is more rapidly absorbed. However, the intestinal flora may contain bacteria which ferment sucrose more readily, and certain yeasts ferment sucrose most rapidly. It is broken down into the monosaccharides dextrose and levulose.

MALTOSE—DEXTRINS

The hydrolysis of wheat or cornstarch results in the formation of dextrin and dextrose, which when mixed with maltose are commonly used in infant feeding as maltose-dextrin preparations. Pure maltose is not used in infant feeding, but maltose is readily fermented, quickly converted into dextrose and absorbed as such. Dextrose is the most quickly absorbed of the sugars, and disappears with great rapidity from the intestinal tract.

Dextrin is a mixture of polysaccharides which belong to a group between starch and maltose. Dextrin is very little fermented by the bacteria of the intestinal flora, but is easily converted into maltose by enzyme action. This conversion is not extremely rapid, so that there is never a surplus of readily fermentable carbohydrate available, which is of advantage in the prevention and treatment of diarrheal conditions. Consequently, it is believed that more carbohydrate may be given without danger of producing diarrhea in the form of mixtures of dextrin-maltose and dextrose, than in the form of lactose, sucrose, or pure dextrose. The dextrin-maltose mixtures prepared by diastatic digestion of starches are more costly than those obtained from the hydrolysis of corn starch—(like Karo syrup).

HONEY AND BANANA SUGAR

Honey contains a mixture of sucrose, levulose and dextrose, and its properties are those of these sugars. Bananas contain carbohydrate in the form of a mixture of sucrose, levulose and dextrose, and the carbohydrate content of ripe banana is about 22% of its total weight. Ripe and dried bananas, obtainable as banana powder, have been used as carbohydrate additions to the infants diet. Levulose also called fructose is a monosaccharide obtained by the splitting of cane sugar, and is derived as a colorless syrupy liquid from fruits and honey.

STARCHES

The starches in uncooked grains and vegetables are surrounded by layers of cellulose, and therefore, raw starches are digested with difficulty because of the inability of the intestinal juices to break down the outer cellular membrane. Starch used in infant feeding is obtained from milled grain, and should be well cooked before feeding.

The very young infant can only incompletely digest even such well cooked starches, though he gradually develops the ability to more and more completely digest the carbohydrate. Uncooked starch is not readily fermented, and probably passes through the intestinal tract unchanged. Rarely, however, bacteria capable of fermenting raw starches may be present in the colon, whose activity may lead to the formation of gas and irritating acids. Starch gruels added to cow's milk cause a finer curd precipitation. By the addition of starch alone to the infant's diet, it is not possible to fully supply his carbohydrate needs, and therefore, other sugars must be added.

INJURIES DUE TO EXCESSIVE CARBOHYDRATE

The excessive addition of carbohydrate to the diet soon leads to an abnormal deposition of fat in the body. The tissues of such infants are high in fat and water, but low in muscle development. These babies are fat and flabby, often overweight, and their power of resistance against infection is usually lowered. If infection or acute digestive disturbance occurs in such an infant, they rapidly lose weight. If large amounts of sugar in the diet are not being absorbed rapidly enough, an excessive bacterial fermentation will occur, leading to the formation of gases and irritating organic acids. This may result in diarrhea with loose acid stools. While such disturbances are usually acute and yield quickly to dietary correction, still a long continued excessive carbohydrate diet may lead to serious chronic disturbances difficult to control.

It has also been suggested that high carbohydrate feeding may be responsible for dental caries, either of its own accord, or due to the resulting reduction of the other necessary foodstuffs, fat, protein, mineral salts, or vitamines.

LOW CARBOHYDRATE DIET

Babies fed insufficient carbohydrate do not gain in weight and their general nutrition will suffer. If the 1:2 ration of fat to carbohydrate is not maintained, the fats will be improperly metabolized and incompletely absorbed. An infant fed on a low carbohydrate diet may lose calcium and magnesium due to lack of fermentation in the intestinal tract. As has been stated, the infant obtains the largest part of his energy requirements from the carbohydrate in his diet. He may exist for a time on a minimum carbohydrate diet, but if the stored glycogen is finally used up, he will begin to utilize his own body proteins and fats for energy sources.

(To be continued)

ACUTE DILATATION OF THE STOMACH FOLLOWING OPERATIONS

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Two grim specters look over the shoulder of every operating surgeon. One is called pulmonary embolus and the other is acute dilatation of the stomach. It would be out of place to consider such widely divergent subjects in a single paper.

Although this paper deals with the aspects of acute dilatation following operations, it is well for us to remember that it also occurs in many medical cases, such as pneumonia, typhoid fever or any of the acute exanthematous diseases. The cases so frequently reported in the newspapers of sudden death from acute indigestion are usually due to acute dilatation. It may occur suddenly on the operating table or during a meal and if not immediately recognized, may lead to the gravest consequence.

Rokitansky reviewed the subject from the standpoint of the pathologist in 1842 and decided the cause to be mechanical. He believed it was due to blocking of the duodenum by the downward stress of the superior mesenteric artery where it crosses the bowel. Brinton, the English physician, writing in 1859, did not agree with him as to the cause and believed it was due to motor paralysis. The condition was most thoroughly investigated and clearly described by Fagge, writing in 1873. His review of the literature and description of the condition has never been excelled and his reports are found in the "Annual Report of Guy's Hospital."

EXPERIMENTS

Within the past few years, a series of experiments, together with careful clinical observations, show that the condition is due primarily to paralysis of the motor nerves of the stomach and duodenum. Smith, working in the Surgical Research Laboratory at Harvard, submitted the following experiments:

Experiment 1. A silk ligature was passed around the duodenum, one inch from the pylorus, and firmly tied. After recovery from ether, the dogs were fed. Vomiting followed. The dogs were killed 24 hours later and the stomachs were empty.

Experiment 2. The duodenum was ligated as in Experiment 1. The largest branches of the vagus nerves were isolated and divided close to the diaphragm, both anteriorly and posteriorly. The dogs were killed 24 hours later and the stomach found markedly dilated. The contents were mostly gas and watery mucus.

Experiment 3. The nerves were divided but the duodenum was not ligated and, while there was no vomiting after the operation, yet, at the autopsy, the stomachs were markedly dilated.

Experiment 4. The duodenum was ligated and the left testicle exposed and crushed in a hemostat. The dog was fed after recovery from the ether, but there was no vomiting. At the autopsy, 12 hours later, the stomach was enormously dilated.

Experiments 5-6. Under ether, the stomach of one dog was inflated with air by means of canula passed through the stomach wall. The stomach of another dog was distended with water in the same way, until peristaltic motion ceased in both cases. When the dogs were allowed to come out of ether, both emptied their stomachs by vomiting.

Experiment 7. A few drops of ether, at body temperature, were injected into the stomach of both dogs and cats by means of a hypodermic needle passed through the stomach wall. Peristalsis was abolished for ten to fifteen minutes. After a larger quantity (one-half dram) was used, the result was marked dilatation and death in four or five minutes.

The conclusion that Smith draws from this series of experiments is that the dilatation is due to paralysis of the vagus nerve. He has a very illuminating article in the *Boston Medical and Surgical Journal*, October, 1899. Aside from reporting these experiments, his most important point is urging early recognition and proper treatment.

In this series of experiments, it is interesting to note that all were carried on when the animals were under ether anaesthesia and, in looking over the records of reported cases, it is well to note the large percentage of cases that occurred under ether. For some unexplainable reason, ether seems to have a peculiar effect on the nerves of the stomach, and this may explain why the stomach nearly always dilates, to a greater or less extent, during an operation. It is easy to note this by lifting up the abdominal walls, looking at the stomach and seeing the gradual distention.

PATHOLOGY

Before going on to the question of symptoms and treatment, it would be well to look into the pathological changes which take place, as an understanding of these is a great help in interpreting the symptoms.

Degenerative changes in the mucosa of the duodenum take place very early. The duodenum not only dilates, but its mucous membrane very early undergoes necrosis and from this necrosed tissue, a proteose is absorbed which, in addition to being a virulent toxin, has a stimulating effect on the mucous membrane of the stomach, causing it to pour out immense quantities of a thin, watery mucous. As this watery mucous is mixed with capillary hemorrhages from the necrosing mucous membranes, it is almost coffee-colored in appearance and the old doctors used to call it "black vomit." When we recognize the fact that the mucous lining of the stomach and duodenum is not permitting the normal transportation of water and is, at the same time, pouring out large quantities of this watery, brown mucous, the dehydration and the large quantity of returning fluid are readily understood.

This is not a question of dehydrating effect, but a question of loss of chlorides, with a consequent upset of the plasma ionic structure and subsequent protein degeneration and increased formation of urea. This is proved by a normal erythrocyte count.

It is a well-known fact that the stomach does not absorb water, but really secretes it; hence the excessive thirst in these cases as, no matter how much water is taken by mouth, it does not pass into the large intestines to be absorbed, and the amount of vomiting is out of all proportion to the fluid intake. The blood-sugar is also increased. The body is quickly dehydrated, because of this excessive secretion of the gastric mucosa and the fact that no water passes the duodeno-jejunal angle.

SYMPTOMS

The salient symptoms will appear in the following sequence: First of all, pain. Naturally, following a surgical operation, especially abdominal, there is more or less pain, but when it is due to dilatation of the stomach, it is of a singular type. You will note that this pain is in the pit of the stomach and is constant in character and of a peculiar nature. It may be as severe as an attack of gallstone colic and is hardly relieved by large doses of morphine.

Next in order will be thirst. When the patient complains of excessive thirst that cannot be accounted for by severe hemorrhage during the operation, the attendant should be very suspicious of dilatation, because as our attention was called to in the pathology, the stomach has not absorbed any fluids and, as the output is fairly rapid, dehydration is an early symptom. The latest research shows that the body requires about 2,500 cc. of water every 24 hours, and this much must be supplied to the patient following every major operation. The bloating is unusually high and can be noted above the dressing of an ordinary abdominal operation.

The vomiting is of a peculiar type. There is no retching or straining, but the watery, brown fliud pours from the mouth like an overflow and comes without warning or effort. Because of this change in the disposition of water in the body, the urine is scant and highly colored; the pulse is rapid but regular; the temperature is normal or may be subnormal.

As the case progresses, the symptoms are all aggravated and the patient will go into a collapse and die, apparently of shock. After experiencing one or two of these disagreeable complications following an operation, a surgeon is on the constant lookout and warns his attendants to keep their eyes open for this particular group of symptoms.

TREATMENT

Vigorous, early treatment is the surest cure. Passing a stomach tube is by far the most efficient remedy. Some advocate the passing of a tube every three or four hours, without any washing; others advocate the Levine tube and continuous drainage. Drugs are of some benefit—but not much. Ergot and eserine are more efficient than pituitrin, though from a physiological standpoint, pituitrin is the logical drug to use; but our experience has been that hypodermic injections of large doses of eserine are more effective than pituitrin.

In reviewing the pathology of these cases, attention has been called to the toxins that come from the necrosed mucous membrane of the duodenum. This is similar to the toxin formed in obstruction of the bowels, and the most efficient treatment is intravenous injections of isotonic salt solution. Gentle massage with an electric vibrator has been found soothing and helpful.

Many surgeons advocate a change of position (modified Trendelenberg) lowering the head of the bed. Some even advocate the patient's being put in the knee-chest position, but this does not appeal to most surgeons where the patient has had an abdominal section. Gastrostomies and gastroenterostomies have been done, but almost invariably with a fatal outcome.

In spite of every effort and even early recognition, a certain percentage of these cases will die; yet beyond all question of a doubt, the earlier this condition is recognized and vigorous treatment promptly instituted. the lower will be the percentage of mortality.

We have had three cases where acute dilatation took place on the operating table and under the eye of the surgeon. Passing the stomach tube and careful watching for a few days following the operation have brought them to a successful termination. Three other cases came on from twelve to twenty-four hours following the operation and two of them were handled with entire satisfaction, but the third one died, in spite of everything that could be done.

The writer took up the problem with the Research Bureau of Prior's and reviewed the literature. The concensus of opinion is that this condition is caused by paralysis of the vagus nerve. When it is allowed to exist for any great length of time, or when the distention goes beyond a certain point, the patient will die in spite of any treatment. The other important point in recent literature is the uselessness of surgical intervention, such for example, as gastroenterostomy or gastrostomy.

SUMMARY

1. Acute dilatation of the stomach is a common occurrence, both medically and surgically.

2. It may come on during an operation or at any time following an operation, within a week.

3. It is characterized by a peculiar, distressing pain in the pit of the stomach, intense thirst, unusual type of vomiting, distention, dehydration, scant urine and rapid pulse, with normal or subnormal temperature.

4. Treatment: Lavage, eserine. intravenous injections of saline solution, change of position and vibratory massage.

A MODERN CONCEPTION OF ADEQUATE DENTAL SERVICE FOR THE CHILD PATIENT*

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The pediatrician, pediodontist. and orthodontist meet on common ground, common because our ideals are the same. All of us endeavor to helpfully assist in modeling that plastic clay which daily presents itself at our doors. Therefore, I am happy to meet with my co-worker, the pediatrician. for a few moments of reflection upon some dental problems of mutual interest. These problems will be classed under two heads: Preventive Dentistry and Preventive Orthodontia.

Today, the practice of preventive dentistry for children is almost unknown in this community from the standpoint of practical application. This applies equally to the laity, dentist and physician. On the other hand. we have made some advancement in dentistry for the adult while in medicine epoch making progress has been achieved. Countless numbers of lives have been saved and the span of life increased for manhkind through the application of serums, vaccines, antitoxins, newer knowledge of nutrition. public health supervision, sanitary projects, and the many other discoveries of modern medical research. When preventive measures are adopted to dentistry in as thorough going a manner as has been the case with medicine perhaps some of our mutual dental health problems will be nearer solution.

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*Read before the Nebraska State Pediatric Society, Omaha, November 17, 1932.

The chief factor that interests the periatrician when considering a child's mouth is the possibility of infection being present. It is vitally important that the child's mouth be negative in this respect when dealing with certain types of disease. It is the opinion of such men as Jeans that there is a possible relationship between certain physical disabilities in children and infected deciduous teeth. Boyd, an associate of Jeans, has long suspected a relation between such teeth in childhood and several types of cardiac disturbances which frequently manifest themselves in early adolescence. Personally, I have seen a number of cases in which there was apparently a definite relationship between infected teeth and other pathology. The first case worthy of recall was a girl, age six. The physician reported infected tonsils, cardiac involvement, and bad teeth When I examined the patient I discovered in addition to two unusually bad infected deciduous molars in the mandibular jaw, bilateral cervical adenitis. The teeth were removed and the child made a rapid general recovery and the adenitis disappeared in about six months. The tonsils had not been removed. I obtained no further information concerning the patient's heart. It seemed logical to me that possibly the chief source of infection for this particular case was the teeth. Another very interesting case was a boy, age 6, who was admitted to the Children's Hospital at Iowa City. The patient was doubtfully diagnosed as having tuberculosis of the hip. There was a daily rise in temperature. An examination of his mouth disclosed six abscessed deciduous molars. The extraction of these teeth resulted in a return to normal temperature without recurrance of the daily rise and a gradual recovery from the hip lesion over a period of several years.

Doubtless each of you could relate somewhat similar experiences.

Abscessed deciduous teeth are extraordinarily common in children. For example, in the schools of Indianola, Iowa, five years ago, 100 children in the first three grades averaged almost two abscesses per child. Needless to state such teeth do not always react with obvious secondary lesions. The essayist strongly suspects without the backing of scientific data, that the most common danger of the abscessed deciduous tooth is as a focus of infection causing a lowered general resistence. Dr. William Shearer of our city has told me that he has frequently witnessed the increase of red cell count in children from whom chronic abscessed deciduous teeth have been extracted. In my dental public health experience school nurses have often pointed out the correlation in children between infected teeth, and bad tonsils and malnurishment. I do not believe that it is unsound reasoning to consider the possibility of the infection of the tonsils by means of the pus which comes from chronically abscessed deciduous teeth.

With the above thoughts in mind, the physician who recommends that diseased tonsils be removed from a physically subnormal child and at the same time insures himself that that patient's teeth are not also foci of infection is doing his job according to the modern conception of prevention. On the other hand to advise parents to undergo an expense of 25 to 100 dollars for the removal of the tonsils and to overlook one or more infected teeth from which the patient may be receiving almost as much infection as from the tonsils is a serious oversight. Hence, it behooves the physician to make doubly sure that certain types of disabilities do or do not have the teeth as etiological or contributing factors nor are they possible barriers preventing prompt recovery from disease remote from any connection with the teeth.

Let us grant that each member of this group is thoroughly cognizant of the information which has been thus far presented for your consideration, we now come to "the nigger in the wood pile.'' Frequently. I have been told by physicians and others that children with badly infected mouths have been referred to the family dentist who in turn has refused, neglected, or advised against the extraction of the infected teeth because of the possibility of causing a malocclusion in the permanent set of teeth. In discussing the reasons for this situation I do not want to give the impression of being disloyal to my profession. However, we must be willing to admit our deficiencies and doubly willing to correct them. Dentistry has its problems of inertia, lack of knowledge, and insincerity among its members the same as has the medical profession. Aside from these causes, there are vital reasons why the general practitioner so often falls down on the job of giving adequate dental care to the child patient. Many dentists, both the recent and the older graduate, have not been taught the importance of and the technic for caring for the child patient while a dental student. Even today, we have some Class A dental schools that do not give adequate instruction and clinical training of this type. In my opinion, this lack of training is one of the principal reasons why dentists do not give first class service to the child patient. They do not realize what can be accomplished toward placing a child's mouth in first class condition and most men know but little about the psychology of handling children. The problem of economics also enters into consideration. Dentists find it difficult to charge a fee comparable to fees collected for similar services rendered for the adult patient; this in face of the fact that the operation for the child may have required more time and extracted a greater amount of nervous energy. Then again, some dentists are tempermentally unsuited to handle children and for them every child is an undesirable patient. In spite of these conditions, I am very happy to be able to inform you that we have a number of general practitioners in Omaha who delight in doing first class preventive dentistry for their children patients. However, as a rule, a dentist in order to render such a service to children should have had as thorough a training for this work as the pediatrician whose specialty is the diseases of children.

In order to further emphasize the importance of properly caring for the deciduous teeth it is worthwhile to consider their chief functions. They are: (1) Mastication. (2) Aid to speech. (3) Maintainance of space for the succeeding permanent teeth, and (4), Aids to the normal development of the jaws, the muscles of expression and mastication. As physicians, you are particularly interested in the first function, mastication. Deciduous molars lost prematurely, broken down through caries, or abscessed and painful to mastication are all conditions which preclude proper chewing of food. A child suffering from such disabilities will not and often by virtue of an extensive lack of mechanical arrangement of the teeth, cannot masticate food as he should. Bolting usually results. It is needless for me to attempt to outline for this group the vicious cycle of systemic disturbance which can result from an inability to properly prepare the food at the port of entry to the digestive tract. An interesting case came to my attention last summer. An examination disclosed two abscessed deciduous molars, a total inability to masticate food on the right side of the mouth and very poor apposition of two teeth on the opposite side. The mother, as a result of my questioning, stated that the child had not been herself of late and had had indigestion for some time. Most decidedly this child's physical resistance was at a lower point than for the average child who is capable of masticating his food in an efficient manner.

The remaining functions of the deciduous teeth will be dealt with under preventive orthodontia. We now arrive at a point of inquiry. What can be done toward the prevention of the serious consequences of dental decay in children and when extensive damage has developed what remedies may be employed?

For preventive measures, permit me to offer the following three essentials for healthy teeth. These are in addition to other well recognized factors which must be observed for the best of health: (1) Proper food in proper balance. (2) Early and regular visits to the dentist, and (3) Mouth hygiene.

It is occasionally observed that some individuals have healthy mouths when one or more or even all three of these factors have been apparently neglected, but in our present discussion we shall confine ourselves to the average individual. In my practice, I question every mother upon several subjects: Breast feeding, and intake of vegetables, fruit, milk, and carbohydrates. My observations on bottle and breast feeding leads me to believe that modern scientific feeding, as nearly as I can tell, results in the production of as well calcified teeth as breast feeding. As a rule where the mother has insisted upon an abundance of vegetables, fruit, and milk, and limited the amount of carbohydrate intake. the child is freer of dental decay than the one whose diet was not so well regulated. Most children who have the candy habit have badly decayed deciduous teeth long before the normal period for shedding. If it were possible to eliminate candy and an excessive intake of other carbohydrates from our diets I believe that our dental problems would be much simplified. These statements are based not only on my own observations but upon the experiments of Drain and Boyd in the dietary control of dental caries and a similar project by Bunting of the University of Michigan in which a group of 433 children in an orphanage were used for a feeding experiment. "The diet prescribed was the regular institutional diet fortified only by 1 quart of milk, and from one to two green vegetables or fruit salads daily, and a reduction of sugar in all forms to a minimum. No cod liver oil or viosterol was given except in a few cases. Active dental caries was reduced to a negligible quantity over a period of one year." Mellanby's experiments and observations are also of value. She stresses the importance of ample intakes of vitimine D and C to normal tooth structure and supporting tissues.

Recently, a girl of fourteen was referred to me. Twenty-eight permanent teeth were present. More than thirty cavities were discovered and a number of cervical decalcified areas. As nearly as I could learn her carbohydrate intake was extreme. Pastries, bread, potatoes, meat and candy were her chief foods. At least one candy bar was eaten each day, sometimes several. Her consumption of milk had been almost entirely limited to that in cooked foods since a small child. She did not like vegetables and rarely ate fruit. I believe that this case speaks for itself as to why the patient's teeth were so rapidly disintegrating early in life.

Perhaps the diet crusade can be overdone, especially in the hands of fadists, but most assuredly in the light of the vast amount of clinical observation and experimental work which has been done toward the solution of this perplexing problem indicates that the diet should be more than passingly considered for the prevention of dental disease.

If the premature lost and abscessed deciduous tooth is to be prevented, the dentist must have an opportunity to detect and fill the cavities while in their early stages of decay. All too often we get the patient when ordinary preventive measures cannot be applied. When it is known that the baby molars, which are eight in number, must last the child until ten and twelve years of age one begins to realize that their careful care is highly important. For example, a child of four presents a cavity in a second deciduous molar; this tooth should last him for from six to eight years longer and indicates that it must be filled as skillfully as though the tooth were of the permanent dentition. No temporary measures can be employed with expectation of lasting over a period of six or eight years. Only permanent fillings should be placed in deciduous teeth.

With persistence and tact children of such an age and younger can be handled sufficiently well to do first class work. Some of the best patients that I have ever had were 3 years of age or younger. Since returning to Omaha it has been a genuine pleasure to see a number of my former patients, now eight and nine years of age, upon whom I had done extensive work at three and four. I well know what extreme damage would have developed had the work which I did not been done.

In some instances children's deciduous teeth are almost beyond repair at 4 and 5 years of age. Consequently, preventive repairs should be applied at 2½ or 3 years of age. A group of pediatricians in Denver, who recently constructed a residential clinic building, provided space for a children's dentist. It is this group's intention to urge all parents of its patients to seek dental inspection for their children when two or two and one-half years of age. These men not only realize their own inability to appraise the condition of children's teeth but they are making an effort to place their patients in the hands of one who is as competent to deal with the child's mouth as they themselves are able to serve the rest of his body. I have learned of several other large cities in which pediodontist and pediatrician cooperate effectively one with the other.

The third phase of prevention is mouth hygiene. Dentists from time to time see mouths which have healthy gingival tissues and are free from dental decay and yet the patient has not practiced mouth hygiene. Percy Howe, who has experimented with monkeys for some fifteen years, states that the monkeys which are fed a balanced ration generally have clean mouths and healthy gingival tissues while those on deficiency diets, especially those with an over-abundance of carbohydrates, usually have dirty mouths and defective gingival tissues. He believes the same holds true for man. The dental profession knows as the result of clinical observation that the mouths which are kept clean by means of the toothbrush have a better chance of remaining healthy than one which is neglected.

What can be done for children where it is too late to employ the initial methods of prevention? Badly broken down deciduous teeth can be and should be anatomically reconstructed. Abscessed teeth should always be extracted for the child physically below par. Children with high resistance may desirably retain such teeth with safety after treated unless such are fistulated. Where pulps are exposed such may be devitalized and retained to normal shedding time.

If extractions are necessary the space should be preserved by means of a space maintainer. If extensive loss of the deciduous teeth occurs at very early ages partials or plates may be constructed and used as efficiently as with the adult.

Last year I had the pleasure of constructing a partial for a patient of eight who had lost all deciduous and one permanent molar in the mandibular jaw. The appliance not only maintained the remaining teeth in their correct positions but enabled him to masticate food which previously had been a very difficult task. Willett of Peoria, reported a case, age 4, in whom all superior deciduous teeth were lost and in the lower arch all but the anterior six teeth. A full denture was constructed for the upper arch and a partial for the lower. The above methods for handling broken down deciduous dentitions give us an insight to a possible trend of dentistry for the future child patient. We are now seeing the bare vanguard of what will one day be as thoroughly accepted as is dental service for the adult of today.

Preventive Orthodontia: Again referring to the functions of the deciduous teeth, we find that practically all of them enter into the problems of orthodontia. To ennumerate: If for any reason a child cannot use his jaws efficiently for mastication there is a corresponding lack of stimulation to mandibular and maxillary growth which in turn results in constricted arches and bunched anterior teeth. If deciduous molars are lost prematurely and the spaces are not maintained mechanically most frequently they become partially or wholly closed, thus impacting or deflecting the permanent teeth which should have occupied those spaces. Again, when teeth assume abnormal positions for any cause there is a corresponding effect upon the proper development and shaping of the mouth, lips, jaws, chin, and possibly the nose, for the supporting tissues logically build about the roots of the teeth irrespective of their position and then the soft tissues adapt themselves accordingly. If the teeth are in malocclusion the face will have a corresponding unfavorable development. The adverse is also true.

The more common causes of malocclusion are:

1. Early loss of deciduous teeth.
2. Undesirable habits.
3. Failure in lateral or vertical growth of the jaws (metabolic, nutritional, endocrine, mechanical) factors.
4. Congenitally missing teeth.
5. Hereditary factors
6. Abnormal frenum labium.

Of these factors of malocclusion, we are especially interested in those which may be eliminated so as to intercept or prevent irregularities of the teeth. For example, one observer found that out of 1,000 of his cases treated, more than 62% were caused or complicated by the premature loss of deciduous teeth. Hence, early and regular care of these teeth is a procedure which will materially assist in the prevention of malocclusions.

The most frequently seen habits which contribute toward malshaped jaws and teeth arrangement are: Mouth breathing, incorrect pillowing, thumb and finger sucking, and lip, cheek, and tongue biting or sucking. I am sorry that time will not admit going into a discussion of these. The important fact to remember is that you as physicians specializing in children should be on your guard for the detection of such habits.

Other deficiencies which should be watched for are: Protruding teeth, receding mandible, protruding mandible, and constriction of the arches especially just before or at the time of the eruption of the lower incisors. For all the above, generally speaking, much can be done toward the prevention of permanent deficiencies if the orthodontist has an opportunity to correct the malocclusion at the earlier ages.

SUMMARY

1. Abscessed deciduous teeth may act as foci of infection.

2. Abscessed deciduous teeth are very common in children especially between five and eight years of age.

3. Dentistry for children as a rule is neglected by the average practitioner. A dentist should be as adequately trained for such work as he is in dentistry for the adult.

4. There is a trend in our country toward a closer cooperation between the pediatrician, pediadontist, and orthodontist.

5. Preventive dentistry consists largely of:
    a. Proper food in proper balance.
    b. Early and regular dental care, beginning at 2½ or 3 years of age.
    c. Practice of mouth hygiene.

6. Many types of malocclusion may be intercepted or prevented early in life by means of early and regular dental care, orthodontic interference, and the elimination or prevention of habits.

In conclusion, to attempt to estimate the enormous economic, social, and medical values of early and regular dental care for the children of our community is impossible. However, these benefits may be brought to realization if those who are in contact with the child and parent will advise and urge that such dental service be secured.

ECTOPIC PREGNANCY

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While emergencies of the abdomen and pelvis are of relatively frequent occurrence, their proper differentiation into the various pathological processes present is too often overlooked. Particularly is this true when we are dealing with extra-uterine pregnancy, the diagnosis being usually made by direct examination during an exploratory operation. While it is not possible to differentiate these cases in all instances, an attempt should be made to establish the correct diagnosis before operation, using all of the criteria available for this purpose. Inasmuch as the diagnosis of ectopic pregnancy is of vital importance, since it demands early surgical interference, we feel that a discussion of this subject is well worth while.

HISTORY

Ectopic pregnancy was first mentioned by Albucasis, an Arabian physician, in 1094 A. D. The first surgical removal of an abdominal pregnancy was done by Primrose in 1594. Doctor John Bard of New York, in 1764, did the first operation in America. The first operation for ruptured ectopic pregnancy was performed by Lawson Tait in 1883. This patient died, but Tait continued to operate these cases and, of his next forty cases, only one died. Since that time operation has been recognized as the necessary form of treatment.

INCIDENCE

Better diagnosis and more accurate statistics have shown an increasing number of ectopic cases. Wayne reported 1.3% at Johns Hopkins hospital. Schumann gave a ratio of one ectopic to 303 intra-uterine pregnancies, or .33%. This ratio is sufficient to demand the recognition of such cases by every practicing physician.

AGE INCIDENCE

Farrar found that 63% of ectopic pregnancies occur between the ages of 24 and 33 years. Frank gave 76% between 20 and 35 years of age. It is but natural that most of these cases should be found during the twenties, as this is the greatest child-bearing period.

ETIOLOGY

The site of fertilization is supposed to be in the tube. In some instances the ovum may become too large to pass through the tube. Chronic salpingitis, causing interference with the cilia; formation of pockets in the mucosa and stricture in the tubes; perisalpingitis, causing interference with peristalysis, and distortion of the tubes by kinks and changes in the lumen, may be responsible for the ovum not reaching its destination within the uterus. Statistics give a wide range for this etiology. Various authors report from ten up to one hundred per cent. With increase in the number of cases reported, inflammation seems to take a decreasing role.

Congenital anomalies, such as diverticula, blind sacs and double lumen of the tube, are also given as etiological factors in these cases. Infantile tubes with long tortuous narrow lumen may also be responsible. Tumors and polyps, which distort or constrict the lumen, would furnish a mechanical obstruction and thus interfere with normal passage of the ovum. Previous operations in the abdomen are being stressed in recent literature as a probable cause. From a large number of statistics, about 10 per cent have had previous abdominal surgery. Litzenberg reports that 15 per cent of his cases had had surgical procedures in the abdomen prior to the development of the ectopic pregnancy.

We shall pass over the pathology since it will have but little practical value. Suffice it to say that the capsule may rupture internally (tubal abortion), or externally into the abdominal cavity.

DIAGNOSIS

These cases may be so atypical that a very careful history is essential. At John Hopkins 72% were diagnosed correctly before operation. This means a mistaken diagnosis in one out of every four cases. Consideration of the following points will be helpful in making a diagnosis:

1. Has the patient been previously pregnant and, if so, how many times?
2. Has a previous operation been performed?
3. Has there been any pelvic inflammation prior to the onset of the present complaint?
4. Has there been abnormal menstruation? From 75% to 96% showed menstrual changes in the various statistics which we have consulted. When the period is missed it is quite presumptive of a pregnancy, but a menstruation that is postponed or prolonged is very suggestive of an ectopic pregnancy. A week or ten days after the menses are due, the woman begins to flow. As a rule, the flow will not be normal, but will be much less profuse and will go along in that manner for a number of days. On the other hand, as long as the ovum grows normally in the tube there is no external bleeding. The bleeding means interference with the growing ovum. This occurs so frequently, however, that it is a very important symptom.
5. Are there indefinite signs of pregnancy? Breast changes and pigmentation may be absent, although frequently there may be pain and tingling in the breasts. The uterus may be enlarged to some extent, depending upon the stage of development. Softening

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Foot Note 1. A complete bibliography may be had upon written request from the authors.

Foot Note 2. From the Bunten Clinic, (Bunten, Bunten, Harris, Miller and Dalzell), Sixth Floor, Boyd Building, Cheyenne, Wyoming.

Foot Note 3. Read before a meeting of the Kimball County Medical Society, Kimball, Nebraska, November 7, 1932.

of the cervix and cyanosis of the vaginal mucosa may be noted, and the patient may complain of some frequency of urination.

6. Is pain a prominent symptom? As a rule, in an ectopic, small crampy pains are noted, but often there is only slight discomfort or soreness in the side.

7. Is there a mass demonstrable in the adnexial region of either side? Very often this is difficult to detect early, although it is usually quite easily palpable after hemorrhage has occurred into the tube or broad ligament. Before rupture there is no blood in the peritoneal cavity, thus no fever and no leucocytosis.

8. The Ascheim-Zondek pregnancy test is of interest, and the same may be said of Friedman's Hormone test, but they are not practical in these cases.

9. Beginning rupture. The presence of an irregular bloody vaginal discharge is significant. Is is usually brownish red and unclotted, although rarely it may be quite profuse with clots in abundance. Paroxysms of pain are quite consistent at this time; usually cramp-like, with sharp stabbing pains in one side of the pelvis. Intervals of complete relief are particularly significant; the interval may be a few hours, several days, or even weeks. Hegar's sign and also Braun von Fernwald's sign are both absent. The cervix is soft, bluish in color and sensitive to movement if there is blood in the peritoneal cavity. The mass may now be felt in the side, and rapid enlargement indicates bleeding in the capsule and impending rupture. There may be a hematocele in the posterior cul-de-sac. A needle puncture will determine whether this is blood or pus. A moderate fever and leucocytosis follow bleeding into the abdominal cavity. The use of x-ray for diagnosis here is of no value, and should not be employed.

10. After rupture. The diagnosis here is most important as quick action is now imperative. There is a sudden attack of agonizing pain in one side, with nausea, vomiting, fainting, shock and collapse. The pupils are contracted. The pulse is rapid and feeble with a low blood pressure. The patient presents a cold, clammy skin; is extremely anxious and restless, and air hunger and thirst are extreme. The pain, however, is relieved as soon as rupture takes place. On the other hand, there is excessive tenderness over the site of the ruptured tube; abdominal distention may be present, with a bluish-black discoloration around the umbilical region. There is also marked tenderness of the tubal mass on vaginal examination, and the cervix is pale, soft and very sensitive to manipulation. A boggy mass is usually found in the cul-de-sac, with the uterus itself tipped to the opposite side of the pelvis.

DIFFERENTIAL DIAGNOSIS

1. Intra-uterine pregnancy. The uterine bleeding in an ectopic is brownish red and more scant than that of a miscarriage from the uterine cavity. The pain of abortion is typical, namely, intermittent cramps over the uterus, which increase in severity with the progress of the affair. In ectopic gestation, the cramps are severe at the start; sharp and stabbing and in one side, and tend to disappear entirely as soon as rupture takes place. The cervix is softer in a normal pregnancy, and is not painful on movement unless it be associated with a simultaneous pelvic inflammatory condition. In the uncomplicated normal uterine pregnancy, there is no fever and no palpable mass in the adnexial region. Hegar's sign is present in normal pregnancy.

2. Salpingitis: Here you have a history of gonorrhoeal infection, with usually a positive smear for the gonococcus. The vaginal discharge is purulent in character. There is a gradual onset of the pain, with a high fever and a high leucocytosis. The cervix is usually firm and hard and the uterus proper is quite small. Vaginal examination reveals tenderness in one or both adnexal regions, with a mass more scattered and firm in character than that found in extra-uterine pregnancy, and the uterus itself is usually not as definitely tipped as it is in a full blown ectopic.

3. Acute appendicitis: The symptoms of this condition are quite generally known, so we will not go into detail on this subject. Suffice it to say that with a history of pain in the right lower quadant, either in the male or female, followed by vomiting, rigidity of the right rectus, tenderness over McBurney's point accentuated by extension of the right leg, moderate fever and leucocytosis, with the absence of characteristic signs pointing to ectopic pregnancy, a diagnosis of acute appendicitis is quite easily made. On the other hand, we must not overlook the fact that this condition may occur along with an ectopic or an acute pelvic condition, or both, as it did in one of our cases.

4. Pelvic tumors: Ovarian cysts are sometimes confused with ectopics, although they are usually larger in size, not particularly tender, and the uterus is normal in every respect. The symptoms and signs of fibroid tumors are also quite characteristic, and should not be confused with extra-uterine pregnancy.

5. Acute pancreatitis: This condition may be mentioned, but is only likely to be confused with a ruptured ectopic with shock, distention, rigidity, etc. However, after careful examination it can be eliminated as the findings will be principally upper abdominal in the pancreatitis.

6. Rupture of gastric or duodenal ulcer: Here also a careful examination will establish the findings in the upper abdomen and thus separate it from any acute pelvic condition.

7. Ureteral or renal colic: The character and distribution of the pain here, together with the findings and the pronounced urinary symptoms will serve to eliminate any grave error in these cases.

In general, the differentiation of ectopic pregnancy from upper abdominal and kidney crises can be made after studying the history of the case, the physical findings, the absence of symptoms relative to the uterine tract and its appendages, and by the location and character of the pain.

TREATMENT

In our experience we have found it to be much safer to do an immediate operation in all cases where a diagnosis of extra-uterine pregnancy has been definitely made. We might go even farther than that and state that we feel that it is imperative to operate these patients as soon as the diagnosis is established, and in doubtful cases, exploration is far better than watchful waiting. Having made these statements, we will now take up the treatment of the various phases of this condition.

1. Treatment of cases which are diagnosed before rupture or hemorrhage has occurred. Immediate hospitalization and operation are advisable. The treatment used while preparing to hospitalize the patient should be directed solely toward preventing rupture. Vaginal examinations and abdominal palpations should be done as little as possible; operation should be carried out as soon as possible.

2. Treatment when rupture has occurred, but the location of the patient or difficulty of transportation renders immediate hospitalization and operation impracticable. Absolute bed rest is ordered at once, and ice caps placed over the lower abdomen. Heat is applied to the rest of the body, and morphine given hypodermically in sufficient amounts to promote quiet and rest. The foot of the bed should then be elevated. No laxatives of any kind should be given, and only low enemas should be given when needed. The diet should be chiefly liquids. This treatment is to be used only until operation can be safely arranged. We will go farther and say that, in the event that the patient's condition becames serious on this treatment and it is impossible or dangerous to the life of the patient to transport her to a hospital. do not hesitate to equip the home a an emergency operating room, and operate at once.

3. The operative treatment of ruptured ectopic pregnancy. The patient should be operated as soon as possible regardless of shock or general condition. Too often the waiting for shock to be controlled means a fatal termination of the case. A woman exsanguinated from internal hemorrhage, with rapid pulse, rapid shallow respiration, cold clammy skin, very low blood pressure and extreme restlessness, has far better chances for recovery by immediate operation and stimulation than by any other treatment.

As soon as the diagnosis is made, we give morphine sulphate one-fourth grain and atropine sulphate 1/150 of a grain, hypodermically; elevate the foot of the bed; apply external heat; stimulate if necessary and do a low laporatomy as soon as the operating room is ready. We have not found it necessary to transfuse in our own cases, but would not hesitate to do so if we felt it was advisable. This can be carried out, if needed, on the operating table. After making the incision, all clots and blood are removed sufficiently to locate the affected tube. The tube is then excised completely, down to the uterine cornua, by the use of clamps and scissors. We do not believe in attempting to save any portion of the tube. If the opposite tube is normal, we leave it; if it is inflamed, we remove it also. The abdomen is closed as soon as possible, and no further abdominal exploration or surgery is done at this time. These cases should not be drained, in our opinion. Fluids are given intravenously, sub-cutaneously and by rectum. The rest of the postoperative care is purely symptomatic and need not be outlined here.

4. Treatment of advanced extra-uterine pregnancy. By this we mean those cases that are not seen until after the fifth month. If the foetus is alive and the patient can be kept under close observation, one may wait in hope of saving the baby. We had one case in which a live baby was secured at the seventh month of pregnancy, which was operated at that time as the patient did not have the funds to remain in a hospital under observation. The baby lived one hour after the operation. Under favorable conditions we would have kept this patient under observation a while longer. On the other hand, if it is definitely proven that the foetus is dead, operation is done at once.

MORTALITY RATE

Statistics on the death rate in extra-uterine pregnancy are as follows: Parry's list of 1876 states that out of 500 cases there were 386 deaths. Philadelphia statistics of 1918 give 13 deaths in 169 cases. Farrar's series had three deaths out of 309 cases. Williams claims only 4 deaths in 147 cases. Schumann had 307 cases, eight of which died. By these figures it can be seen that the present mortality is under four per cent.

SUMMARY AND CONCLUSIONS

We have attempted to present in a general way the practical side of the subject of ectopic pregnancy. We have attempted to stress the importance of correct diagnosis as soon as possible as well as early operation. We feel that this condition is too often mistaken for something else, and operative interference delayed at the expense of the patient. We would, therefore, urge complete and careful histories and examinations in all cases where ectopic pregnancy is suspected, and that the treatment be carried out as suggested in the earlier pages of this paper.

SOME OBSERVATIONS REGARDING APPENDICITIS*

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My purpose in bringing this well known subject to your attention is to assist in a renewal of our study and interest in what is probably the most common and most important intra-abdominal surgical lesion. In spite of these facts this condition seems to be taken altogether too lightly by both laity and physicians; the former no doubt taking this attitude because we ourselves have come to underestimate the seriousness of the disease.

The death rate in the United States from appendicitis has risen steadily in the past three decades; in 1900 the death rate was 9.7 per 100,000; in 1910, 11.4 per 100,000; in 1920, 13.4 per 100,000; and 15 per 100,000 in 1927. This is an increase of 54.6% since 1900 or an average increase of 17.5% each decade. This increase obtains in spite of the fact that hospital records show much less mortality among the late cases with gangrene, perforation, and peritonitis. These facts plainly indicate that the simple cases are being allowed to become the complicated cases, and that this increasing mortality is largely preventable by early surgical attention. We all know this, but it is probably brought more forcibly to our attention if we realize that the operative mortality in simple clean cases is almost nil, (much less than 1%), while the mortality in the drainage cases jumps from 11 to 15% according to different statistics.

If we remember also the difference in the morbidity rate of these two types of cases, the simple appendix with a hospital time of 8 to 12 days, and total loss of time of three weeks, compared with three to six weeks hospital time and a total loss of eight to twelve weeks or more, the price we are paying for delay is obvious.

Van Zwalenburg(1) has written some very interesting articles upon the mechanics of appendicitis. He advances the very logical idea that there is a vicious circle in acute appendicitis, the proximal cause being a narrowing of the lumen and the immediate cause being a fecal mass or concretion lodging at this constriction. Thus there is formed a closed cavity harboring a foul, putrefying, infected mass that is an ideal culture medium for the ever-present pathological bacteria. This cavity becomes more and more distended with fluid with a greatly increased pressure measuring 30 to 70 mm of water. As a result the blood vessels of the walls and mucosa are closed, there is circulatory statis, congestion, edema, effusion, strangulation, and anoxemia. The infectious organisms are colon, staphylococous, streptococcus, and a host of others, about half of them being anerobes. There is a lack of drainage, crevices develop in the mucosa with prompt invasion by these organisms whose numbers may reach millions in a very few hours. As a result of these factors there develops perforation and peritonitis, or gangrene with a permeable appendiceal wall through which these pathological organisms migrate into the peritoneal cavity, producing peritonitis not differing from that produced by a frank perforation.

It is unnecessary to go into great detail regarding the diagnostic problem, but a resume of some features may be of value. In acute appendicitis pain is the one constant factor; it usually originates in the epigastrium, (due to solar plexus irritation), or may begin anywhere in the upper abdomen, or about the umbilicus, or even the left abdomen. Ordinarily within 24 hours the pain is localized to the right lower quadrant, but pain originating in the right lower quadrant is very likely not due to appendicitis. Nausea, with or without vomiting, often follows the onset of pain in a few hours. If they precede the pain the basic condition is probably cholecystitis or some other intra-abdominal lesion other than appendicitis. Persistent vomiting is usually indicative of peritonitis or obstruction. Sudden cessation of pain often means perforation, gradual cessation without abatement of other symptoms usually means gangrene. The amount or severity of the pain is no indication of the amount of pathological change in the appendix.

Tenderness may at first be general, but tends to localize at about the same time as the pain, the maximum point of tenderness being over the base of the appendix, and usually at McBurney's point, however it may be absent or very indefinite in pelvic or retrocecal cases.

Rigidity is of course due to parietal peritoneal irritation and is most marked over the base of the appendix, unless there is an extension of the inflammation. It is frequently accompanied by a flexion of the right thigh and rather shallow breathing. It is quite diagnostic if present, but is frequently absent.

Fever is rather inconstant being present in about 75% of cases, if present it rises slowly for

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*Read before the Twelfth Annual Meeting of the Seventh Councilor District Medical Society, Superior, Nebraska, October 27, 1932.

48 hours and subsides by lysis. It seldom exceeds 100 to 101 unless there are complications. Initial sudden high fever, with or without chills, makes the diagnosis of appendicitis doubtful. Too much reliance should not be placed upon the presence or absence of fever.

The white blood count and the differential count are important and should be made as routinely as the history and physical examinations. However operation should never be undertaken or deferred on the basis of the leucocyte count alone. We have all observed many cases with a normal white count, that at operation revealed a gangrenous or purulent appendix, or even peritonitis. We have also seen extremely high counts, around thirty thousand, causing us to feel certain of a peritonitis, that at operation revealed the infection entirely confined to the appendix.

With the assistance of one of our residents at the Lincoln General Hospital, Dr. Thomas Mitchell, I have just completed a study of the appendicitis cases of 1931. There were 273 appendectomies performed for appendicitis, that is we have not included those removed secondary to some other procedure. Of these 273 cases, 157 were acute and I wish to direct your attention to the leucocyte counts in these acute cases. We have a record of the count in 148 cases; it was over 10,000 in 108 cases, which is 72.9%, it was under 10,000 in 40 cases, or 27%. We have records of 131 polymorphonuclear counts; there were 91 that were 75 or over, 69.4%, and 40 that were below 75, or 30.6%. You will note that there is a very constant relationship between a definite leucocytosis. (over 10,000), and a definite increase in the polys, (over 75), the leucocytosis being present in 72.9%, and the increase in polys, in 69.4%. Of more importance is the observation that in 27% there is an absence of leucocytosis, with no increase in polys in 30.6% of the cases. It is evident from these figures that if we depended upon the leucocyte count alone we would miss approximately one case of acute appendicitis in every four. The absence of leucocytosis in 20% of 5121 acute cases in 27 Philadelphia hospitals is noted in a study made by John O. Bower(2). This percentage no doubt reflects more accurately the average because of the large number of cases studied. The use and coordination of our history, physical examination, and laboratory examinations, are essential to a clear and complete picture, which in turn is indispensable to proper rational treatment.

In our series there were 60% females and 40% males. Pain was constant being present in all but two cases, (probably faulty history), tenderness was present in all but six cases. Rigidity was noted in 59%, nausea in 72% and vomiting in 43%. The pulse was over 80 in 72%, and 45% had had one or more previous attacks. We had hoped to be able to present some data upon the effect of laxatives in our cases, but our records show but one case that had received a cathartic, and it was a case of peritonitis that expired. Bower reports 160 cases with data regarding laxatives; there were 130 cases of general peritonitis of which 98.4% had had laxatives. Further comment upon this feature is unnecesssary, except to say that laxatives and delay in operation are the outstanding causes of perforation, peritonitis, and death from appendicitis.

Our records show 42 cases of chronic appendicitis, 74 subacute, and 157 acute cases. There were 7 deaths, 2.56%, all in cases showing gangrene or perforation, and peritonitis, and requiring drainage at the time of operation. At the time of admission 8.4% of all the 273 cases were gangrenous, 10.25% had peritonitis, a combination of gangrene, perforation and peritonitis was present in 19.4%. Our mortality with 18 different operators shows 0% in the clean cases, 2.56% in our entire series, and 13.2% in cases with peritonitis. Bower reports a total mortality in the Philadelphia series of 5.97%, made up of 2.55% in 12 hour cases, and going up to 11.83% in cases over 72 hours.

We still occasionally hear arguments relative to the merits of the expectant, or Murphy-Fowler-Ochsner treatment and the immediate surgical treatment of appendicitis with peritonitis. Ashurst, quoted by Davis, studied 247 complicated cases, that is gangrene or perforation, and peritonitis; 210 cases were operated immediately with 10 deaths, a mortality of 4.8%; 37 cases were given the expectant treatment of Ochsner, with 13 deaths. a mortality of 35%(3). When we recall that localization and abscess formation are the maximum results to be obtained from the Ochsner treatment, that the abscess, if it forms, requires operation later with a mortality the same as early operation. that 1/6th of the cases do not form an abscess but die of the general peritonitis, that the mortality of the Ochsner treatment is approximately 7 times that of early surgery, there is but small basis for or logic in the argument against early surgery.

In our series 9% were in the first decade of life, 27% in the second, 38.7% in the third, 12.7% in the fourth, 6.3% in the fifth, 3.8% in the sixth, 0.85% over seventy years of age. In 1929 there were 17,687 deaths from appendicitis recorded in the United States. When we consider that approximately 85% of cases of appendicitis occur in persons of 40 years or younger, we realize that this is a tremendous economic loss, and also that it is a loss that is preventable to a very large extent.

The value of a jejunostomy in peritonitis has been and still is, a much debated question. This we do know, that it is utterly valueless when done late, in the absence of peristalsis, in the "silent abdomen." When done at the time of the initial operation no one can be sure of the need for it, and whether or not it may not add complications to an already desperately ill patient, and if recovery takes place whether the jejunostomy is entitled to the credit or whether the patient would have recovered by the usual treatment. Study of many series of cases in which the early complemental jejunostomy was done, reveals the fact that these cases did no better and the mortality was not lower than in cases where the jejunostomy was not done. Personally, I can see no indication for it except in the presence of a definite obstruction developed in an intestine in which peristalsis is still present. It has no value in the relief of paralytic ileus.

SUMMARY

1. A revival of the interest of the study of appendicitis is in order and will be of great benefit due to the increase of the mortality due to this disease in the United States.

2. The death rate and the increase in morbidity present is almost entirely in the complicated cases presenting either gangrene or perforation with peritonitis. Mortality in the simple cases is practically nil.

3. The oft repeated warning of the avoidance of laxatives should be emphasized more and more.

4. Early operation is essential to keeping down the mortality.

If these rambling remarks and observations will assist in the recognition, management, and revival of study in this common but all-important subject, the writer will be well repaid for the efforts involved.

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DIFFICULTIES OF X-RAY DIAGNOSIS OF ULCER*

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Three years in sanitarium practice gives some opportunities for observation in the field of gastro-intestinal complaints that are not to be had in general or private practice. The idea prompting a paper on this subject is the wide difference in opinion of surgeons as to how often gastric ulcer actually occurs contrasted with the vast number of sanitarium patients who give a history of having at one time or another been diagnosed as ulcer. Surgeons in various sections of the country when questioned regarding the frequency with which they have seen ulcer vary so much in their statements that an attempt is made to indicate factors of error in the preoperative diagnosis. Several stated that the majority of duodenal ulcers they have been called on to operate for have turned out to be chronic appendices and chronic gallbladders. As to subjective symptoms of ulcer the taking of histories where the patient can be seen at least once a day or oftener over several months throughout a sanitarium stay brings out no symptom complex of ulcer that they may be called characteristic. With this in mind the definite determination of ulcer is largely dependent on x-ray findings except in the few cases that show gross hemorrhage by mouth or through the bowel, or where obstruction is persistent.

Reviewing the literature written by roentgenologists it is seen that there are two schools of thought regarding the interpretation of x-ray changes indicative of ulcer. One school referring to themselves as the Continental School use the effects on motility, a coronal formation of the rugae, peristalsis, hyperperistalsis, antiperistalsis, increased and diminished emptying time, various spasms, six hour residue and pressure tender point in addition to the filling defect. The technic of their examination is the use of barium sulphate meal in thick solution followed by fluoroscopic observation of the progress of this meal through stomach and pylorus. The other group are not impressed by any findings except the positive demonstration of the persisting defect in the stomach wall as shown by bismuth in the ulcer crater, its passage through the stomach wall due to perforation, a defect in the shadow due to induration—a permanent hour glass and pyloric obstruction other than from a new growth. They use a liquid meal, because of its greater opportunity to penetrate all cavities. Both agree that the action must include an observation of the patient in all positions that are needed to bring to view the entire stomach wall and agree that serial plates should be made at short intervals to record findings of pathology. The chances for error in gastric ulcer are much less than in duodenal ulcer because of the accessibility of all commonly involved sections of the stomach to direct visualization under fluoroscopy and in as much as all observers are agreed that duodenal ulcer occurs six times as frequently as gastric ulcer the problem of differential diagnosis applies more to the duodenal condition. The first portion of the duodenum extends from the pylorus to the gallbladder and is about five centimeters in length and spoken of as the cap. This is rather easily demonstrated by x-ray whereas the descending and the transverse sections require observation in various oblique positions of the patient, both erect and prone. One statement regarding the method of diagnosing post-pyloric ulcer is based on the recognition of the constant deformity of the cap caused by induration or cicatricial contraction surrounding the crater of an ulcer or resulting therefrom. "The induration of an ulcer projects into the lumen of the cap causing a displacement of bismuth as constant as one's finger prints in a ball of putty." The majority place their greatest reliance upon a persistent defect in the cap as demonstrable by serial roentgenograms. They state also that "if one radiograph out of fifty shows a perfectly symmetrical cap and a normal pyloric sphincter a negative diagnosis of post-pyloric ulcer is justified."

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*Read before the Madison Six County Medical Society, July 19, 1932.

For convenience and clearness, the whole question depends upon the following propositions, which are substantially based upon the work of Cole and his observers, and have stood the test better than all other methods up to date.

"1. The direct method consists in demonstrating adequately the anatomical condition of the first portion of the duodenum. This is opposed to the conception of the symptom-complex, which emphasizes only inferential evidence and is not conclusive as compared with the direct method where we actually try to demonstrate the lesion.

"2. Ninety-five per cent of all duodenal ulcers occur in the first portion of the duodenum.

"3. Anatomically, the first portion of the duodenum is a constant entity.

"4. If normal, the first portion of the duodenum can always be demonstrated on a plate with characteristic shape and smooth outline. There is no exception to this rule. Apparent exceptions are due to improper technique.

"5. A constant defect in this duodenal cap on the plate means a pathological condition. This may be ulcer or pressure from adjacent organs.

"6. Any duodenal ulcer which is more than a simple mucous membrane erosion will deform the outline of the bismuth mass. To this statement there is no exception.

"7. A normal duodenal cap on the plate, rules out chronic indurated or surgical ulcer. There is one exception to this rule: that is the minute recent ulcer which perforates without prodromal symptoms. However. we are not obligated to consider this from a Roentgen point of view."

During a recent medical service eleven cases were admitted with records indicating examination outside of the sanitarium and in various New York and Boston clinics, causing the patients to be classified as a gastric or duodenal ulcer. Inasmuch as these men were employees of the Metropolitan Insurance Co. and received disability over a period of six months because of this diagnosis, it was necessary from a financial standpoint to be absolutely certain that this was the existing pathology. On admission to the sanitarium the eleven cases were put through a routine history and physical and gastro-intestinal x-ray course that had been worked out by a combination of the technic of both accepted schools of gastro-intestinal x-ray. Following this examination the entire group of cases had been classified under the diagnosis of gastric or duodenal ulcer. These were all men who worked long hours as insurance agents and under considerable pressure, subjected to conditions of living which were in no way conducive to good digestion. Their symptoms were occasionally what is thought of as a typical textbook picture of ulcer but oftener food specificity and relief pain, nausea and vomiting, flatulence, etc., varied from any standard. They showed varied amounts of hydrochloric acid secretion all the way from high to low. Some were positive for occult blood but again this group showed no classical arrangement of symptoms that might be thought of as pathognomonic of ulcers. These cases were all directed to the sanitarium regime and established on the Sippy diet. Because of the highly neurotic tendencies and nervous instability of this group it was decided to put them on sedatives and repeat the x-ray examination in order to check up the accuracy of the earlier findings. Carrying this out they were given 60 gr. of sodium bromide daily and 10 drops of tincture of belladonna three times a day. With a few cases sodium amytol was used in place of the bromides. This was continued for a minimum of ten days and in the six hours preceding the check-up x-ray three tablets of 1/100 of atropine sulphate was given and as a conclusion the x-ray on this occasion showed only two cases in which the persistent defect could be demonstrated. In the others the stomach and doudenal contours appeared smooth and could be filled in all areas by manual pressure. Inasmuch as the cases received the diagnosis agreed upon by the entire staff of six physicians and two pathologists and the radiologist, these cases were all held as unclassified until further examination was made along other lines. Circumstances prevented an absolute determination of the outcome of all these cases due to a change in location, but it is remembered that several were determined to be chronic appendices, one or two to have positive gallbladder pathology by the Graham-Cole test, one turned out to be intestinal tuberculosis and several were classified as gastric neuroses. The purpose of the paper is to point out the unreliability of the type of x-ray examination which does not under a check-up use anti-spasmodics and depend for positive findings on a defect which will persist through the primary and check-up examination. It seems evident that what was interpreted to be ulcer was reflex spasm from other organs containing pathology or irritation of the vagus nerve because of the general irritability of the patient. It is highly probable that a great number of cases which go from one sanitarium or clinic to another under the assumption that they require treatment for ulcer are cases of gastric neuroses in whom repeated examinations and dietary directions have caused an aggravated condition and that the occurrence of true gastric ulcer is as the surgeon finds it quite a rare condition.

The x-ray technician whose work was concerned with this series of cases was a physician of ten years experience in this particular field and who had frequently noticed that the spasms in the pyloric area and cap could be relieved by having the patient talk or laugh or sing while being fluoroscoped. Also the fact that various eastern x-ray technicians in dealing with gastro-enterology have considered it advisable recently to add a psychiatrist to the staff at the time the patient is being observed, is indicative of the tendency to consider neurogenic factors in ulcer cases. The type of patient who is subjected to this particular examination combined with the environment that he is put into, the dark room and a group of people surrounding him looking through the fluoroscope screen, the entire procedure is one to aggravate any disfunction of mobility that he might ordinarily have. It is true in this as in metabolic determination that greater accuracy is found after the patient has learned all the factors he is to contend with through being subjected to the test, and then a second attempt at certainty before being put on a search for a comforting diet that obviates the possibility of his other pathology or neurosis being treated according to indications. Dr. Cushing in the *Journal of Surgery, Gynecology and Obstetrics,* points out the occurrence of acute gastric ulcers following brain operations and relates much experimental work which enhances the value of neurogenic factors in the creation of ulcer—too few x-ray technicians know about or are concerned with psychic elements in the digestive function so it seems that indirect and inferential evidence is no basis for a diagnosis unless it will stand a check-up under anti-spasmodics.

ELECTRIC CATARACT*

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There are instances in which lenticular opacification appears to be due to electric shock. These cases are usually grouped under the common heading, "traumatic cataract." In cataracts of this group although other intraocular structures besides the lens may have been affected by the same cause, in most instances traumatic cataract is independent of gross damage to the other intraocular tissues. This is especially true in the specific cases of electric cataract. These patients come in contact with a high voltage electric current; then, after experiencing a sudden flash of light there was often a period of unconsciousness. It is not unusual in the history of the case to find that the patient suffered burns about the head and face.

The following case of electric cataract is presented for consideration because of the unusual opportunity it afforded for observation and treatment over a long period. It was complicated by an acute retrobulbar optic neuritis of the left eye, but after treatment the result was a corrected vision of 20/20 in each eye.

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*The patient was presented before the Omaha-Council Bluffs Ophthalmological and Otolaryngological Society.

CASE REPORT

On September 10th, 1927, G. J., a white boy, 14 years old, was digging worms on the property of an electric transformer station. When he straightened up his head came within a few inches of an electric wire carrying 13,200 volts. The current leaped the gap between his head and the wire, there was a sudden flash and the boy fell unconscious. He received first aid and was taken to Lord Lister hospital. The hospital record shows that he was burned about the head, face and right leg. His right shoe sole had been almost entirely burned off. As there were no severe symptoms except the burns, he was discharged from the hospital within a few days.

On May 25, 1928, the patient, because of impaired vision, was referred to me by his family physician, Dr. J. J. Freymann. During the whole year the boy had found increasing difficulty in seeing either distant or near objects clearly. Other details of the history are omitted as they have no bearing upon the topic under discussion. A routine physical examination by Dr. Freymann at the time was essentially negative. Urinalysis and blood count were normal; serum Wassermann reaction was negative.

Eye examination: The vision of the right eye was 20/20 minus 2, while that of the left eye was 20/70 plus 2. A study of the near points showed that the accommodative power was normal for the age and that the muscle balance was within the usual limits. There were no lesions of the external ocular structures. Fundus examination of the right eye exhibited numerous dot-like and short rod-like opacities in the lens in all layers. Although the background was easily seen, no lesions of the disc, retina or choroid could be discovered. In the left lens the opacities were more diffuse than in the right; the variation in size was from punctate dots to small striae. Besides these smaller oapcities there were two coarse clump-like opacities which were situated in the posterior cortex of the lens. There was no ophthalmoscopic evidence of pathology in the fundus.

Refraction under homatropine cycloplegia demonstrated an error of the right eye as follows: plus .75 sphere, combined with plus .75 cylinder, axis 90; left eye: plus .50 sphere, combined with plus .75 cylinder, axis 75. The vision of the right eye could not be improved beyond 20/20 minus 2, but that of the left eye was brought up to 20/40 minus 1. The fields of vision were normal except for a slight enlargement of both physiological blind spots. Neither blind spot was enlarged more than a few degrees, but in view of later developments it is noteworthy that the scotoma of the left eye was the larger.

On account of the detailed studies that were required in this case, the examination was not completed for several days. Before my final report was submitted (the case being then in litigation), I asked Drs. Harold and Sanford Gifford to see the patient with me. They agreed with my diagnosis; and to rule out any later controversy as to the location of the lens opacities, the results of an examination with the slit-lamp microscope were recorded. This examination showed that in each eye all of the lens opacities were situated within the lens capsule and that they were densest just inside the capsular membrane.

Although the lens changes increased steadily, there was but little effect on the acuity of vision prior to December 24th, 1928. At that time, however, the corrected vision of the left eye dropped suddenly to 20/100 plus 1; the corrected vision of the right eye was 20/30. On January 2nd, 1929, a relative central scotoma of the left eye was demonstrated by means of the Peter campimeter. The patient was referred to Dr. B. M. Kully who reported the presence of a fairly large mass of infected adenoid tissue in the nasopharynx. Dr. Kully removed the adenoid mass on January 15th, 1929, and within a week the corrected vision of the left eye had improved to 20/40 minus 1. The acuity of vision fluctuated somewhat for a time but remained better than 20/50 for a considerable period.

Following this episode the lens changes progressed more rapidly in the right eye than in the left. During February, 1929, the vision of the right eye decreased to 20/200 and could not be improved. By this time there were several coarse streak-like opacities in the lens. These streaks extended from the periphery toward the center and were suggestive of the star-like figure which occurs in senile cataract. At this stage of the lens clouding the dot-like opacities were coalescing to form streaks.

While both lenses were steadily verging into more advanced stages of cataract, the corrected vision of the left eye was 20/40 minus 1 as late as November 1st, 1929. From this time, however, the vision failed rapidly and by February 15th, 1930, the patient was unable to get around alone. Before deciding upon the operative procedure that was to be employed the patient was tested out with an intradermal injection of sheep lens extract. As there was no reaction from the lens protein a discission operation was considered preferable to a simple linear extraction of the lens.

On March 13th, 1930, a discission was performed but there was not sufficient needling and the capsular wound closed without absorption of much of the lens cortex. A second operation of this character, although carried out much more radically, was performed on April 7th, 1930. With this procedure the capsule and cortex were incised vertically and horizontally, the incisions being carried well into the depths of the lens. The lens absorbed rapidly, so that on May 16th, 1930, the vision of the operated eye was 20/20 with plus 9.75 sphere and plus 1.75 cylinder, axis 90.

A discission operation was performed on the left eye on October 14th, 1930, as the lens had become completely opaque. Although the cortical substance of the lens absorbed in due time there was an after cataract in the form of a grayish membrane which covered all of the pupillary area. This membrane was needled January 22nd, 1931, with an excellent immediate result; only four days later the corrected vision was 20/70.

Complications now occurred which caused a reduction of the corrected vision in each eye. This was brought about by a regeneration of the capsular epithelium of the lens. The opacity became so great in the right eye that by April 10th, 1931, the corrected vision had decreased to 20/200. A discission of the membrane on April 13th, brought about a corrected vision of 20/20 within a short time. As similar changes had occurred in the left eye, a needling operation was performed on May 11th, 1931. Following this procedure the media remained almost perfectly clear and the vision with correcting lenses was improved to 20/20 within two months. The patient was examined at intervals during the next eight months and the corrected visual acuity was found on all of these occasions to be 20/20 in each eye.

COMMENT

The American Encyclopedia of Ophthalmology(1) states that in cataract from electric shock there is a marked congestion of the ciliary body with violent spasm of the ciliary muscle; then follow changes in the epithelial lining of the anterior lens capsule. These alterations are often complicated by unequal pupils, rupture of the choroid, traumatic uveitis and detached retina. By reason of its anatomical location the lens becomes a target for all of the light rays which enter the eyeball through the pupil. Should these rays emanate from lightning or from the discharge of high voltage commercial electricity the lens is more apt to be affected than the structures which are posterior to it. In this instance it would seem that the lens has played the role of a protecting screen. Such, however, is not always the case, as the retina, choroid and optic nerve may be damaged while the lens remains uninjured.

Hess(2) discovered through his researches that by electric shocks the epithelium of the lens capsule was made to die and this in turn caused a clouding of the lens. In commenting upon the pathogenesis of cataract from electric shock Fuchs(3) observed that the power possessed by the electric discharge killed living cells in the lens even without the development of heat. Yvert(4) said that minute ruptures were made in the anterior lens capsule which permitted the aqueous to enter and cause clouding of the lens cortex. Leber(5) looked on the opacities as due to albuminous coagulations. Hess(6) experiments showed that the first lens clouding occurred at the equatorial zone, especially where the ciliary body hyperemia was greatest. This opacity increases until it appears as a grayish white line running parallel with the edge of the lens. At first there are seen only punctate dots in the lens. These are made up of masses of dead epithelium which have been separated from the capsule by a flaky albuminous substance; or again the epithelium remains clinging to the capsule while the dying ends of the cortical fibers are separated from it by a more or less rich quantity of fluid. The tendency of the dots is to coalesce, for striae or lines to form and eventually for the opacity to become total. From the records of reported cases one learns that cataracts develop in widely varying periods after exposure to the discharge of high voltage electricity. Variations run according to different observers all the way from four months to seven years. It has been found and noted too that currents ranging from 200 to 50,000 volts have caused cataracts.

SUMMARY

1. In the case herein reported the first examination of the eyes was made eight months after the injury. Both dot-like and fine striate opacities were visible ophthalmoscopically; slit-lamp examination showed the opacities to be greatest just beneath the lens capsules, but some opacities were noted in all depths. No other ocular pathology was found.

2. Both lenses became fully clouded in slightly less than two and one-half years after the accident. The patient was not sensitive to lens protein. The lens cortex absorbed rapidly and completely following discission operations. It was not necessary to evacuate the anterior chamber for the release of intraocular tension; the tension was never above normal and there was no apparent iridocyclitis.

3. The development of an acute retrobulbar optic neuritis of the left eye was recognized early and the removal of an active focus of infection restored the central vision.

4. Regeneration of the capsular epithelium reduced the vision in each eye after the lens cortex had become absorbed and made subsequent needling operations necessary for each eye.

5. The final corrected vision of each eye was 20/20.

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WHEN THE BABY ARRIVES

When a little baby comes
Little fingers, little thumbs,
Little chubby feet and toes
And the little button nose
Give the mother more delight
Than the stars which shine at night.
Others race to get a view
Of that little baby new.
Come the grandmas hastening there
In the happiness to share,
And among the wondering crowd,
Walk the grandpas, very proud.
Comes a most devoted aunt,
Whom no other can supplant,
To discover endless charms
In those little dimpled arms
And to bring, as aunties do,
Little gifts of pink or blue.
So in manners quaint and strange
Thus the lives of many change.
With new hope the future gleams,
New delights, new cares, new dreams,
And with joy the old world hums
When a little baby comes.

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THE BILLION DOLLAR SMOKE

A Working Truth in Reference to Cigarettes and Cigarette Smoking.

HENRY FARRELL, M. D.,
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"This emotion of truth, when practiced, is one factor in producing the state of humility for we are well aware that final and absolute truth is not attainable—all that is attainable is a working truth." (Dickson, D. E.).

With this thought in mind an examination was made of the nose, throat, and chest of a hundred cigarette smokers (85 male and 15 female), as they came in order, to see and learn what, if any, the harmful effects were, the seemingly perniciousness to the habitue of the slave of Lady Nicotine.

Time and thought in its rapidity of action and travel has made many changes in our modes and customs and particularly so in reference to habits —and I lay stress, of course, on the habit of cigarette smoking. It seems that the old timer, the gentleman with the fancied briar or the stock of clear Havanas, is passing on (even among physicians, business men, and the professional class and there has grown up among us, irrespective of sex, from adolescence to old age, a generation of cigarette smokers.

How did it come about that in the form of cigarettes Lady Nicotine flirted with us for years, was spurned, considered vulgar and pernicious, and we were finally won over by an exciting exhilaration and gathered in by the charms and reaction of an unwavering appeal? Three things stand out on my mind as the direct cause of this lasting and universal habit. It was brought about mainly, it seems to me, as an aftermath of war, prohibition, and an advertising performance stealthy in the extreme, magnificent in its summons and invocation, the like and similar performance of which the world had never seen before and perhaps never will again.

The nocturnal broadcast of a certain brand alone has been echoed for a thousand nights; it has been toasted and dined, x-rayed with the ultra-violet, added to the luster and prevarication by Hollywood, and passed out to the multitude by sight and sound with the most extravagant and absurd claims ever put out by the master showmen. It seems all that is lacking in perfection is a vitamin content and that the D in the group as the final solution will soon be announced by an excited radio warbler. But what one wants is results and facts.

The younger McPherson was quite right in his reference to advertising as we puffed and exhaled to the extent of 120,000,000,000 cigarettes in 1931. The internal revenue alone was over $120,000,000. The total consumption of cigarettes in the United States for the past two years has been:

1929	113,990,353,873
1930	119,944,475,002

The internal revenue on cigarettes for these two years was:

1929	$342,034,000
1930	$359,881,000

Add to this the total cost to the consumer and our yearly light weed bill in the United States is $1,000,000,000.

But what is the cost in health to the inveterate cigarette smoker? How does it effect the mouth and throat, the bronchial and nasal passages, the heart and respiration? From many yeears of observation and numerous examinations, I am led to believe that with the exception of the extremely sensitive individual the ill effects, as far as general health is concerned, are negligible. It is to be assumed that the alkaloid nicotine is the important factor in the trial of supposition and inditement. In smoking there is always absorption of nicotine, perhaps increasing to some extent with inhalation, and this along with pyridine as the products of decomposition. To this may be added the carbon monoxide which is always present in the smoke, approximately ten parts in ten thousand parts of air, and we have the two substances, namely, nicotine and carbon monoxide, that are responsible for the harmful effects of cigarette smoking.

It is generaly recognized that the local effects on the mouth, nose and throat play a part in the habit of cigarette smoking; likewise with the pipe, the cigar, snuff, and chewing tobacco. But it seems certain that the constitutional effect—the real exciting, pleasure-giving effect—depends almost entirely on the absorption of the nicotine content. In the process of manufacturing cigarettes where the greater percentage of nicotine had been taken out of a certain brand, it was found that the habitue consumed thrice the number as the one that had the tobacco blend in the original state. And in order, of course, to get the desired effect, by no stretch of the imagination, of radio appeal, cosmetic advertisements, ultra-violet, toasted and roasted in the process of cure, high pressure methods in the bought-paid for-and-delivered testimonials can the chemical properties be altered of this well-known alkaloid of tobacco (nicotiana tobacum).

It is there as a principal constituent, nicotine being accompanied by a volatile oil in the preparation and drying process of the tobacco. It serves as the flavor and odor and most likely the "strength"—depending in part on the kind and quality of all tobaccos. The nicotine content of Turkish tobacco is low compared with other varieties of cigarette tobacco, averaging only one to one and one-half per cent. Our annual import from Turkey of this tobacco is approximately 14,550,000 pounds. About the same amount is imported from Greece and Bulgaria. For this reason, on account of its mildness and low percentage of nicotine and, moreover, its easy and rapid combustion, it forms the so-called Turkish blend of many cigarettes.

Maryland tobacco is also low in nicotine content, averaging only one to one and one-half per cent, while Burley is higher, from one and one-half to two and one-half, flue-cured being the highest with about two to three per cent nicotine.

The leading brands of American cigarettes are blends of these four types of tobaccos, the largest percentage being of flue-cured and Burley with smaller amounts of Maryland and Turkish. Nicotine is the only constituent of tobacco which possesses toxicological interest although several other alkaloids are present in comparatively small amounts.

Contrary to the lay belief and many in the profession, nicotine taken and consumed in its usual form may be considered as an exciting toxic stimulant rather than a narcotic poison, and its elimination from the system is fairly rapid and complete in fifteen hours. This may be easily recognized in the fine tremor of the hand, seen especially in the handwriting, noticeable in many smokers during the consumption of cigarettes over a day and almost entirely absent the next day with the complete withdrawal of the light weed.

Such affections as the so-called tobacco-heart, toxic amblyopia, a form of neuritis effecting the eye, and periods of insomnia clear up with surprising rapidity upon the abandonment of the tobacco habit.

I have observed that the daily act of the moderate smoker, when small quantities are inhaled repeatedly, the individual soon gains a certain tolerance and little reaction is produced, either local or general, in the average habitue of cigarette smoking. Like eating or drinking as a comparison the injury lies in intemperance and excessive indulgence.

With some sensitive individuals, more noticeably in men than in women, there is a slight aggravation of premature contractions in hearts already affected from other causes with an added increase of the pulse rate from three to five beats per minute. There seems to be no proof yet adduced that cigarette smoking adversely effects a normal heart unless used immoderately.

Pulse Rate Before Smoking	Five Minutes After Smoking	One Hour After Smoking
Men (85) 19 to 60 Years		
77	83	80
Women (15) 19 to 45 Years		
75	80	77

Nicotine is quickly absorbed from the mucous membrane of the mouth, nose, throat and bronchial passages and taken into the circulation with well-defined action inside of one minute. Note the tracing of the electro-cardiogram before and after the smoking of one cigarette on an apparently normal heart.

Though slight, there may be seen and felt some changes of an inflammatory nature in the different tissues of the gums, buccal surface, tongue, tonsils, pharynx, larynx, trachae, and esophagus of the inveterate cigarette smoker. However, this chronic catarrhal condition of the mucous membrane is seldom, if ever, provoking and it is a rare occasion that the habitue calls on a specialist for relief of sore throat. For the reason that nicotine is an excitant with direct action on the suprarenal bodies, there is an immediate stir in the peristaltic wave of the alimentary tract following the after-breakfast cigarette and this class of smokers almost never complain of constipation.

To the many answers as to whom and what won the war, I think some credit should be given the Turkish blend. The Americans came with their young man power, ammunition, and the exciting driving action of cigarettes. That dull and timid alike were awakened by an exciting exhilaration with added zeal and zest by little Lady Nicotine, there is not the slightest doubt. No particular brand of cigarettes is soothing to the throat and bronchial passages, but every smoker gains a tolerance with indifference to the slight catarrhal condition of the mucous membranes caused by any and all brands and the amount of absorption of the nicotine.

Nicotine was a quick driving force for rapid fire action and in part was the greatest welcome to the French and Tommies—surprising as it may seem—more welcome to the cause in the extreme instance than either food or clothing. This nervous excitation and apparent stimulation was brought back by the dough boys and passed on to an American public—this pernicious habit of cigarette smoking—conveyed to the young and old alike and in part has kept us in a rousing, fast-working state of mind the past decade. What was formerly slow and methodical in our usual business ways is now one of feverish excitement and exhilarating stimuli. This depression and lack of coin as a purchasing power has slowed us down considerably but we are still making a strong endeavor to keep up the rapid pace. It leaves the impression that 20,000,000 of us are cigarette-minded and cling to the delusion that as long as they satisfy the constitutional results are harmless.

There is a sound illustration over the radio nightly of this perverted psychology which is painfully and plainly evident to the casual sober one listening in. The programs are put on with a vim and dash that is startling, punctuated by the high C, "On with the dance," "O. K., liberty bell," and a nerve racking shrill that strikes one off balance unless, of course, the audience can inhale and join in with the hilarity and exultation of this particular brand of cigarettes. The peculiar and amusing part of this nightly cigarette recital is that many of the brands so highly touted and shouted zephyr-like are those heavily laden with burley and flue-cured tobacco with a nicotine content of two to three per cent. Of the dry and parched brands, reason out if you can just why they are less harsh to the throat. How long we can go on quickening the circulation and respiration and puffing the billion dollar smoke with impunity is a mystery to me, but fortunately the mills of the gods grind slowly, even if exceedingly fine.

SOME STUDIES ON MIDDLE EAR INFECTION

James A. Babbitt, Philadelphia (*Journal A. M. A.*, Dec. 31, 1932), presents some further studies and opinions on the practical treatment of persistent middle ear infection. For purposes of his study a separate classification of the true otorrheas and ears presenting persistently recurrent discharge was not made. From a practical standpoint, such a discharge, even with slight intermissions, and without obvious background for the recurrence, presents a routine problem. Acute and chronic suppurative otitis media presupposes extension of infection from the nasopharynx through the eustachian tube, by direct transmission from the blood or lymphatic stream (thrombotic in the exanthems) or by extension from infection in the external auditory canal. Infections in the nasopharynx or posterior ethmoidal area of the nares, septic tonsils, teeth and sinuses are of importance, and the management of presenting intratympanic involvement demands a careful scrutiny of these areas. As the sequence of persistent infection bears such close relation to the adequate diagnosis of the tympanic membrane, its drainage in the proper manner and at the proper time, the value of the picture presented by the line of the malleus, and its short process, the vascularity bordering the annulus and along the malleolar line, the differentiation of surface myringitis and the occasional horizontal fluid line should all be emphasized. A careful comparison with the unaffected ear with perfect illumination will aid in the opinion as to Shrapnell's area. The incision should be a long one, if the tympanic membrane is to be opened, commencing near the posterior commissural fold, well away from the vessel supply of the annulus and well around at the base. One incision ought to suffice save to remove congealed secretion, for later incision encounters inflammatory sequence and scleroses, and secondary drainage is often more damaging than satisfactory. There is no evidence that hasty operation on the mastoid leaves the ear in a better condition than one spontaneously quieted through careful drainage and rhinopharyngeal attention. Perhaps sufficient study of ossicular mobility in later years in relation to hearing and tinnitus might disprove this. The single point to be made is, if the ear is to be opened, one should do it thoroughly and once for all.

THE ROCKEFELLER FOUNDATION AND THE MEDICAL SCIENCES

The Rockefeller Foundation has, for many years, maintained active programs in the fields of medical science and public health. In medical science, for a number of years preceding 1929, attention was given chiefly to the support of medical institutions, and an extensive program of surveys of medical education and aid to influential medical centers was carried out. Since 1929, interest has centered in the development and fostering of research. Recent undertakings have been aimed directly at the advancement of knowledge through aid to clinical and laboratory investigations or assistance in the provision of more fully trained teaching personnel.

Among the research projects sponsored, was work connected with problems in virus diseases, puerperal fever, neurology, serology, biochemistry, and dental pathology, as well as studies of the common cold. Medical research was aided at such institutions as Vanderbilt University; the University College Hospital Medical School, London; the Universities of Leipzig, Germany, and Szeged, Hungary; the American University of Beirut in the Near East; and the Universities of Brussels, Belgium; Montreal, Canada; and Edinburgh, Scotland.

During 1931, the Foundation supported and administered directly eighty-nine fellowships in the medical sciences and thirty-five in nursing. In addition, it supplied funds to the National Research Council and to the National Committee for Mental Hygiene for fellowships for Americans, and to similar organizations in other countries for fellowships for citizens of those countries. In all, the Foundation provided, during 1931, a total of 353 fellowships in the medical sciences, through which it was hoped that young men and women in many countries might be aided in preparing for careers in research in the medical field.—*Science*.

LONGEVITY AFTER CORONARY THROMBOSIS

To illustrate the longevity and physical activity possible after acute coronary occlusion, Paul D. White, Boston (*Journal A. M. A.*, Jan. 28, 1933), presents the case of a man who died of apoplexy at the age of 80 and showed at necropsy a firm scar in the heart muscle resulting from the healing of an infarct which occurred seventeen and one-half years before. The heart was otherwise in good condition anatomically and so sound functionally that ten years after the heart attack the patient was able to climb a mountain at fast pace without symptoms, at the age of 73 years. The three points of especial interest and importance in the case are (1) the patient's longevity, for he survived the acute coronary thrombosis by seventeen and one-half years and lived to the ripe old age of 80 years in spite of it; (2) that when the patient did finally die, his death was not due to heart disease (but to cerebral hemorrhage), and (3) that for many years after the coronary thrombosis the patient was much more strenuous physically than the great majority of men of his age who have no heart trouble at all, and even when he approached his eightieth year he was able to walk 5 miles a day without trouble if he did not hurry or climb hills. This is a case which may serve not only to demonstrate the wonderfully recuperative power of a seriously injured heart muscle, but also to put hope into the breasts of the many victims of coronary thrombosis, who, having recovered from their acute attacks, still live in dread, waiting for the sword of Damocles to fall in the shape of a second and fatal attack.

SIMPLE DICTION

There lived in a country neighborhood a number of years ago a woman with a remarkable vocabulary that found amusing expression every time she took up her pen. Her "jaw-breaking" manner of expressing information of any kind afforded much amusement to teachers of the country school to which Mrs. Wise sent her children. One of her small boys failed to appear at school one day, and on the following morning he came, bringing with him the following excuse written by his mother:

"Dear Miss Adams: Kindly condone the unavoidable and regrettable absence of my Adolphus at 'the house of learning' yesterday. Circumstances quite beyond finite control combined to render his absence a matter of imperative necessity. No one realizes more than I, that irregularity of attendance retards the advancement of pupils and prevents them from securing the high marks it is desirable that they should receive. No matter how great the mentality of a child, its highest development is dependent upon uninterrupted application at school. I, therefore, regret and trust you will pardon the combination of circumstances that caused a vacuum that should have been filled by the physical presence of Adolphus at school yesterday."

In simple and direct diction, Adolphus had the stomach ache.—J. L. H.

MANAGEMENT OF ACUTE THROMBOPHLEBITIC EDEMA

In order to accomplish a rapid disappearance of thrombophlebitic edema in the lower extremities, the following principles of treatment are systematically employed by Geza de Takats, Chicago (*Journal A. M. A.*, Jan. 7, 1933): maximal elevation of the affected limb; restriction of fluid and salt intake, and repeated injections of a mercury diuretic salyrgan, with adequate premedication. Later, gradual exercise and massage are started, the object now being to prevent reformation of the edema. This management, however, is effective only at the time when the edema appears and is hardly effective in the chronic, irreparable stage of fibrosis. The author believes that further trial in a large series of cases is desirable.

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THE BLOODGOOD CANCER CLINICS

The Bloodgood Cancer Clinics held at St. Joseph's hospital, Omaha, April 18, 19, 20, attended by over two hundred physicians and dentists, were outstanding in the manner and mass of material presented. Dr. Bloodgood has a highly dramatic manner of presentation and his enthusiasm is contagious. It is remarkable that this man, well past his prime and without hope of reward, other than the feeling of doing for humanity, should travel to every corner of the United States and Canada in propaganda to make not only the laity but physicians and dentists cancer conscious. He was well seconded by Dr. Charles F. Geschicter, pathologist of the Surgical Pathological laboratory of Johns Hopkins Medical School and Hospital.

The clinics in order were: On jaws, teeth, oral cavity; bones and joints; tumors of the breast; tumors of uterus and ovary; tumors of skin and appendages; tumors of the genito-urinary system; tumors of the gastro-intestinal tract; tumors of the chest.

Evening addresses were given on "Bone Dystrophies." Dr. Bloodgood gave a lecture on cancer prevention, and "What Every Physician Should Know About Cancer" was discussed before an audience of nurses, physicians and dentists.

These clinics, altogether very profitable, were given under the auspices of the Creighton University College of Medicine and under the immediate direction of Dr. James Kelly.

SOMETHING MORE ABOUT HEALTH INSURANCE

Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association, was in Omaha, May 3, and spoke before a special meeting of the Omaha-Douglas County Medical society.

The bureau is making a thorough study of all phases of medical economics. The group insurance plan of medical care was the object of special study and was before the Omaha-Douglas County Medical society for action at the meeting.

Dr. Leland stated that of all the plans formulated not one had so far developed a plan free from objectionable features or was acceptable to the American Medical Association. The San Diego plan—of which more later—was mentioned with some favor.

The Omaha-Douglas County Medical society voted against the proposition of taking up with group health insurance, a plan for which is being developed by private parties in Omaha.

Minnesota Medicine for May, in discussing group health insurance, says:

"Physicians rightly look with suspicion on any commercial scheme for providing medical care. In such cases, funds which should be spent exclusively on medical care must be made to yield profits to lay promoters. As the Bureau of Economics of the American Medical Association has repeatedly pointed out, approximately 40 per cent of the money paid by subscribers for all such medical insurance schemes goes, not for medical and hospital care at all, but to cover overhead of organization, salaries of salesmen. profits on investment.

"The physician can see no adequate reason for making such costly experiments when better care at lower costs can be had directly from a well qualified physician. He must reckon, however, upon an unusually susceptible public and upon a continuous newspaper propaganda favoring reorganization of medical practice which nicely paves the way for commercial sorties into the medical field.

"Certainly it should be the responsibility of the organized medical profession to protect the public against questionable schemes of medical insurance."

EGG, WHEAT AND MILK FREE DIETS

This office has just received a copy of "Egg, Wheat or Milk-Free Diets, With Recipes and Food Lists" by Dr. Ray M. Balyeat of Oklahoma City. This work, as do all the works of this author, deals with an allergic problem. This particular problem which he has attempted to solve is one that has confronted practically every practitioner of medicine.

Ever since allergy has been discussed there has been an attempt made to find out in what way foods can affect the body in allergic disease. Dr. Balyeat gives a resume of the various conditions in which he thinks foods play a part. The description is easy to read as it is quite brief and to the point. He does not go into the argumentative side of the question; he states the facts as he sees them.

The book contains many recipes for use in eliminating foods such as milk, wheat and eggs. These three foods are basic in the American diet and for a physician to tell a patient to remove, for example, eggs from the diet is an unsatisfactory procedure. Eggs are used so universally in foods that it is entirely possible for the patient to be getting eggs in his diet without realizing that he is doing so. Dr. Balyeat has pointed out where, in our diet, this food and the others mentioned may be found.

This book will be found quite beneficial, both to the practitioner and to the patient who is striving to avoid these very common foods. Coming from the pen of Dr. Balyeat this book will find many readers because of his recognition already gained by his previous works. This book fills one more need that the general practitioner of medicine has felt keenly for the past few years.

—E. L. MacQuiddy, Omaha.

LEGISLATIVE ACTION OF INTEREST TO THE PROFESSION

The longest legislative session in the history of the state of Nebraska has ended with the net result to the profession of the passage of two bills fostered by organized medicine and the rejection of a dozen others of merit. The passage of the two bills is a signal victory for which the legislative committee of the Nebraska State Medical Association deserves much credit. Perhaps few of us realize how much work and vigilance on the part of the legislative committee is involved in looking to the interests of the medical profession during a session of the legislature.

Senate File No. 193, which cut down the statue of limitations in malpractice suits from four to two years is a very important enactment. The result of this change in the law may result in a possible reduction of malpractice suits by one-half.

Senate File No. 126 amends the medical practice act by removing the present three year time limit within which a licentiate who has allowed his license to lapse by failure to register annually must make application for reinstatement. It provides also that an applicant for a license by reciprocity may, in lieu of the evidence of actual practice now required, show that he has served an internship of one year in an accredited hospital.

Bills introduced and indefinitely postponed or killed were the following:

A bill concerning the admissibility of evidence as to whether a physician carries insurance in a liability case.

Two bills concerning the chiropractors which attacked the Basic Science Law.

Two bills regarding the feeble-minded and insane.

A sterilization bill.

A child welfare bill.

A railroad-pass bill.

A compensation bill in regard to surgical fees.

SIR HENRY DALE'S ADDRESS AT THE MERCK DEDICATION

In an address delivered at the opening ceremony of the Research Laboratories of Merck & Co., Inc., Rahway, New Jersey, held April 25, Sir Henry H. Dale, M. D., Director of the National Institute for Medical Research, London, England, stated:

"In the field of medical science, which is that of my own direct experience, I am inclined to doubt whether the ideal relationship has yet been everywhere established, between research in the Universities and the hospitals on the one hand, and that associated with the pharmaceutical industry on the other. The finding and acceptance of a proper relationship, however, is vital to the progress of both alike, and to their union in an ordered advance, along the common front of medical science and its applications. It is a matter of special importance to an institution such as this, which starts today on its career, with the good wishes and the confident hope of us all. I hope, therefore, that I may be allowed to put briefly before you a few ideas as to the special kind of service which an organization such as this may render to medical science, and as to some of the difficulties which it may have to face.

"Let us recognize, in the first place, that investigation in that group of sciences which contribute to medicine entails certain special obligations. The practitioners of medicine are bound, by a tradition of long and honorable history, to place any new knowledge, gained in the practice of their art, freely at the disposal of their professional brethren, without any concealment or any attempt to restrict its use for private advantage. This tradition has no connection with any formal code of professional etiquette governing medical practice. Its basis, I think, is a recognition of an essential condition for the advance of medical science; and in recent years, as such advances have come in increasing measure from the research laboratories, the workers in these, whether medically qualified or not, have in general shown themselves eager to embrace this great medical tradition, and to accept this freedom of the great medical brotherhood. Without committing ourselves too hastily in advance to the details of its application over the whole field of enterprise, I think we must accept this tradition as embodying a true ideal, and one which we cannot afford to lose or to see obscured. For medical research differs from that in other fields in this respect, that its ultimate aim is the provision of knowledge which will find its application in the relief, the cure, or the prevention of human sickness and suffering. Further, while all medical research, however remote from any immediate thought of such application, preserves this ultimate aim, no practical development of the results of medical research can be made, no therapeutic invention can be completed, without a full and frank cooperation with those engaged in clinical practice. Those who are engaged in the task, vitally important to the progress of medical science and practice, of translating the new knowledge of natural laws and principles into terms of practical therapeutics, as the workers in these laboratories will be, require the fullest confidence and cooperation of those, on the one hand, who are freely exploring new avenues of knowledge, without an immediately practical objective, and those, on the other hand, who are directly responsible for the care and the treatment of the sick. And in order that this frank and full cooperation and confidence may be established, between all those engaged in furthering medical discovery and its application at these different stages, they will need to convince one another that they are bound together in a common cause, and by loyalty to a common tradition.

"It will be your task, as it was mine, to show these colleagues that work in these laboratories supported by industrial enterprise, though differing from theirs, perhaps, in the nature of its immediate objective, can be as genuinely inspired by the ideals of the advancement of medical science, and of service to suffering humanity; and that even in researches undertaken in the interests of some immediately practical development, the alert investigator, given such freedom as you will surely have here, will find the opportunity for making additions to the common fund of scientific knowledge, which may be as fundamentally important as those which come from the academic laboratories. They have had examples before them, indeed, for many years, from other laboratories established and maintained by great pharmaceutical houses in this country; and it must surely be generally recognized that some of the great advances in medical knowledge, which have in recent years come from American Universities, have been made possible by the cooperation which only industrially supported research could give.

"No invention in the medical field can be completed or brought to use without the cooperation of the physician and his patients. I believe that such cooperation will be readily and properly given so long as it is clear that the aim of industrial research is the real increase of knowledge for the ultimate benefit of mankind, and not the promotion of some narrow commercial aim.

"The idea of cooperation involves some differentiation of function. It would not be in general interest of science that the academic institutions and laboratories such as these should be following exactly similar lines of investigation, with the same kind of immediate objective. Broadly, we may distinguish their respective functions, I think, by saying that the primary task of those academic laboratories, which are concerned with the ultimate advancement of therapeutics, in the increase of our fundamental knowledge of the problems involved, without any immediate or insistent thought of its practical application. The function of science in the universities seems to me to be well expressed in the old formula, which, since its foundation in the seventeenth century, has defined the purpose of the Royal Society of London—'the improvement of natural knowledge by means of experiment.' That tradition has not needed any artificial importation into the universities of this country. One of the first and greatest of American citizens, Benjamin Franklin, was himself a distinguished Fellow of the Royal Society. Your primary task in these laboratories, on the other hand, will be to find applications for the laws governing therapeutic action, as fundamental enquiry reveals them, and to translate them into the practical terms of remedies ready for the treatment of the sick.

"When Michael Faraday, patiently seeking the improvement of natural knowledge, with an inspired curiosity, discovered the phenomenon of electro-magnetic induction, he probably had little thought that it would find any practical application; if he had had any prevision of the kind of civilization which, a hundred years later, would have arisen on his discovery, the thought would probably have appalled him. It will surely happen in the future, as in the past, that free and fundamental researches will often lead to the most important practical discoveries; and we need not grudge his good fortune to the academic investigator whose work has such a result. I do think, however, that there is a definite danger lest he should be diverted by it from his proper task of further free enquiry, and should devote his interest to the practical development and application of a discovery already made, which, in many cases, he had better leave to others. The concentration of popular enthusiasm, on discoveries which are immediately applicable in therapeutics, is natural and intelligible. We need have no fear of its effect, provided that a proper balance of recognition is preserved within the universities themselves, between the achievement of a practical success, and the fundamental advancement of knowledge."

BOTULINUS ANTITOXIN

At the meeting of the Nebraska State Medical Association in 1932 the writer and Dr. H. F. Gerald presented a paper entitled, "The Present Status of Botulism in Food Poisoning." This communication was published in *The Nebraska State Medical Journal* in October, 1932. In dealing with the therapeutic phase of botulism, it was stated that botulinus antitoxin for human cases was not available. The authority for this statement was explained to be the Sharp and Dohme Company of Baltimore to whom an inquiry had been sent through their local representative.

In an article in the *Journal of the American Medical Association* in August, 1932, it was pointed out that botulinus antitoxin had been given to a patient during an outbreak of botulism in North Dakota. The article stated that the antitoxin had been obtained from the Jensen-Salsbery Laboratories, Inc., Kansas City, Missouri. This led the writer to communicate with the manufacturers and the information was obtained that they have been providing botulinus antitoxin for human cases for the past eight years under a license issued by the U. S. Department of Public Health.

It is to correct the misinformation which was presented in our previously mentioned communication that this statement has been prepared.

—Charles M. Swab, Omaha.

HUMAN CONVALESCENT SERUM FOR POLIOMYELITIS

The Polio Commission of the Omaha-Douglas County Medical Society is prepared to furnish human convalescent serum to doctors in the state who desire it for the treatment of anterior poliomyelitis. It is especially desired that the serum be administered if possible before the onset of paralysis.

If you desire this serum telephone or communicate with Dr. Floyd Clarke, Omaha, Nebraska. (Telephone At. 0338).

OUTSTANDING PIONEER OBSTETRIC EXPERIENCES—PATHETIC, HUMOROUS

UNDER SUSPICION—THE OLD CLAY PIPE—FALSE PAINS

I was called to take charge of my first obstetrical case soon after beginning the practice of medicine in 1877. I knew, I suppose, about what the average medical graduate of that time was supposed to know of midwifery. I had one book on that subject which I had read quite thoroughly, and besides, I had listened to two courses of lectures. The first by Daddy Mears, as the boys called him, of the Indiana College of Medicine, the second by Dr. Thad. H. Reamey of the Ohio Medical College, and had witnessed the delivery of one woman before the class in Cincinnati. I remember Daddy Mears telling us never to use chloroform, or do any thing else to relieve labor pains, because these pains were the result of a curse placed upon woman by God Himself, and to relieve them would be very wicked. I remember, also, that during the course of the case of labor conducted before the class at Cincinnati, Dr. Reamey took from his pocket an ordinary lead pencil and taught us the art of rupturing the membranes with a lead pencil. Well, I went to my first obstetrical case with fear and trembling. First, because of my inexperience, and second, because I knew that the mother and an aunt of the patient had objected strongly to my being called on account of my age, and lack of experience, so I knew I would meet with opposition. Everything went well until the child was delivered, the cord tied and cut, and the baby in the lap of the grandmother for further care. Then began a period of nervous waiting for the delivery of the after-birth. After waiting for about thirty minutes I was getting so nervous I was afraid the attending woman would notice it, so I made an examination, but all the tissues felt just the same to my uneducated finger, and then walked out into the yard to think. I had not gone 20 feet from the house when a remark of Dr. Thad. H. Reamey came to my mind: "When in doubt always trace up the cord." I returned to the room, traced the cord, and found the placenta waiting in the vagina to be delivered, which office I performed and everything was well. The two old ladies at once became my friends and were profuse in their congratulations.

Six miles south of where I began the practice of medicine in Indiana, 55 years ago, was a section of country composed of clay hills covered with a growth of jack-oak trees. The land was poor and the people who lived there were as poor as the land they occupied, but no better, kinder people ever lived anywhere. On these clay hills they raised their own tobacco and the men and women all smoked their clay pipes.

It was the custom in this community, when a new baby was expected, that all the women within a certain radius should be invited and it was usual to find from six to eight neighbor women present when the doctor arrived. Each woman had her pipe and a pipe was always prepared and ready for the doctor. The duty of one of the attending women consisted in setting by the head of the bed, near the patient, and keeping a pipe lighted and going. During the course of labor pain the attending women smoked, when the pain had ceased to annoy, the pipe was turned over to the patient and she smoked until forced, by another pain, to relinquish the pipe to her lady in waiting. I have wondered many times in recent years if these women had become sufficiently modernized to discard the clap pipe in favor of the more modern and stylish cigarette.

In the spring of 1885 or '86 I was called to go sixty miles south through the sand hills to attend a woman, who, the messenger said, had been in labor for three days without making any progress. Sixty miles by team over sand hill trails (not roads) was a full day's journey. I arrived at my desination in the evening and was ushered into the room of the patient, whom I found resting comfortably. She greeted me with: "Now, doctor, I want you to tell me the truth, I have thought everything over and am resigned, I can stand anything, no matter what it is." I prepared myself and made an examination. Finding no signs of labor, I said, "You are prepared for the worst," and she answered: "Yes, doctor." Then I said, "If you will just wait patiently until your time comes you will come into labor and have your baby just like any other woman." "Why, doctor," she said, "ain't I in labor." I assured her that she was not. She was very much surprised as well as pleased. Three days before she had been taken with a few premature pains and an old gentleman who was living in the community, and who claimed to have been a doctor in the Confederate army, was called in. After making an examination he told her she would be all right soon, that the head was already down in the bones (whatever that means), and then lay down in another room where he slept until morning. Getting up in the morning he noticed she was having no more pains so got out his horse and went home.

About two weeks later I received a letter enclosing a check and telling me that they had a fine baby and all was well.

George O. Remy, Ainsworth.

ALLERGY HINT IV

Food Allergy as a cause of nasal symptoms is very frequent. Common colds are often due to food.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT VIII

In nine cases out of ten, the early case of tuberculosis attracts the physician's attention by signs not referable to the lungs; either by general loss of capacity for physical exertion, temperature, loss of weight and appetite, or by symptoms from the gastro-intestinal, circulatory, nervous, or upper respiratory systems.

—Miles J. Breuer, Lincoln.

MEDICO-LEGAL DISABILITIES

In the consideration of an injury of a claimant in which external force is applied without consent, "the result" is the deciding element, and if the result is unforseen, unusual, or unintended, it is an injury by "accidental means or cause."

—Czar Johnson, Lincoln.

EDITORIAL PARAGRAPHS

New advertisers are the J. B. Lippincott Co., (Balyeat's Egg, Wheat and Milk Free Diets).

It is reported that the birth rate in the United States between 1921 and 1931 fell 17 per cent.

It is stated that there are in the United States over four hundred thousand patients in hospitals for nervous and mental diseases.

The Fifth International Medical Postgraduate Course of the Tomarkin Foundation, Locarno, Switzerland, will be given at St. Moritz, August 13 to 27.

The American College of Physicians will hold its Eighteenth Annual Clinical Session in Chicago, with headquarters at the Palmer House, April 16-20, 1934.

Tropical countries are relatively immune to nerve syphilis and the explanation is thought to be the endemic prevalence of malaria, since malarial fever kills the spirochete.

The death, April 26, by automobile accident, of Dr. Philip Webb Davis, Portland, Maine, editor of the *Maine Medical Journal* and secretary-treasurer of the Main Medical Association, is announced.

Looking toward the Fall Clinics of the newly formed Omaha-Midwest Clinical society, Dr. Dean Lewis of Johns Hopkins, president of the American Medical Association, has been booked as one of the speakers.

The American Proctological Society will meet at the Stevens Hotel, Chicago, June 12 and 13. Dr. R. Russel Best, Omaha, will appear on the program with a paper on "The Use of Certain Anaesthetics in the Postoperative Treatment of Rectal Diseases."

The reader will understand that the June *Journal,* in the mails on the first day of the month, was in the printer's hands during the days of the annual meeting and, therefore, no report of the proceedings can be published before July.

A mental hygiene institute sponsored by the Omaha Council of Social Agencies was conducted May 5 and 6. Dr. George K. Pratt of New York City, psychiatrist, author and director of the Mental Hygiene committee of the New York State Charities Aid association, was the principal speaker.

Dr. Walter L. Bierring, Des Moines internist, well known in Nebraska, as over the entire country, has been appointed secretary of the Iowa State Board of Health. It is understood that under his leadership the entire state board work is to be reorganized during the next year, and that the idea of service in reorganizing the work prompted acceptance of the task.

Considerable has been written lately about the changes in teeth produced by fluorine ingestion. Mottled enamel seen on teeth is due to fluorine in the drinking water. There are several areas in the United States containing fluorine bearing water, the most notable one being the so-called St. David region in Arizona. The effect of using fluorine bearing water, containing above .02 of one per cent of fluorine is the teeth become mottled, chalky white and brittle.

The Chicago Medical Society announces that at the Century of Progress Exposition the society will have a booth in the Hall of Science building in Group K, where information for visiting physicians will be given for the asking and will assist visiting physicians in every way possible. The Woman's Auxiliary of the Chicago Medical Society will welcome the wives and daughters of physicians.

That publicity in the lay press does produce results is evidenced by the following: An outstate physician published in his county paper, anonomously, an article entitled, "Why the Public Should Demand Postmortems." A long-time ill patient of the doctor read the article and was so impressed by the argument that he left a request for a postmortem. He recently died and the postmortem was held. This convinces author of the lay press article, and will impress others—that all the public needs is a little education along this line.

During the sessions of the annual conference of Secretaries of State Medical associations and Editors of State Medical Journals last November in Chicago, a member whose identity is forgotten asked the editor for a scrap of blank paper. We passed him our note book. Recently we found the note book with the following written on the last page, and it is worth publishing: "The socialism of medicine is but a step toward the socialism of industry. To tax A, to pay B's doctor bill is an appalling plan particularly when we put it on the ground of conserving public health. But why not then tax A to pay B's food bill since it is nutrition that is essential to health? It is comforting to know that the doctors themselves are in revolt at the Wilbur report."

It takes a judge to every now and then, tell the county boards that physicians have rights in connection with the care of the paupers and indigents, that the boards are bound to respect. Judge Blackledge of Adams county informed the county board of that area the other day that it has a responsibility with respect to caring for the sick. It was a case wherein the board refused to provide hospitalization for a person who needed it. The court pointed out the plain duty of the local government, at the same time declaring it is the duty of the board to use discretion and judgment in its use of public money. The judge said the board was compelled by law to furnish medical treatment to persons, whether residents of the county or not, who had no means of procuring treatment and who were found to be in need of attention by a physician or surgeon. In his decision he said: "This does not open the door to indiscriminate claims for medical or surgical aid, but covers the cases before the court where an emergency clearly existed within the provisions of the statute."

NECROLOGY

Byron B. Davis, Omaha surgeon; native of Fayette, Wis.; University of Nebraska, B. A., 1882; University of Minnesota, M. D. 1884; Internship, Minnesota General hospital; general practitioner McCook, Neb., for seven years; spent part of two years at the clinics of Berlin and Vienna; located in Omaha in the practice of surgery in 1894; professor of the principles of surgery and of clinical surgery University of Nebraska College of Medicine for many years; chief of the department of surgery of Immanuel hospital with which he had been connected for thirty-nine years; member of the surgical staffs of the Methodist and Clarkson hospitals; president, Nebraska State Medical Association, 1922; member and sometime president of the Western Surgical and Gynecological Association; charter member, American College of Surgeons; first president of the recently organized Omaha Midwest Clinical society; regent, 1887 to 1893, of the Nebraska State University; a tireless student and a forceful and voluminous writer; died April 20, 1933, following an emergency operation, aged seventy-three years. A widow and son, Dr. Herbert H. Davis, Omaha, survive.

The members of the Nebraska State Medical Association deeply mourn the loss of this distinguished surgeon. He was a great surgeon, a great American, deeply beloved by the profession to all of whom he was a friend. It is said that he never spoke an unkind word about confrere or rival.

Among his outstanding qualities were a fine personality, a friendship and loyalty to the profession and to friends, a tireless energy, a human heart and a fund of good humor.

We shall miss his inspiring presence at our meetings, his happy companionship and his courageous support of all good things pertaining to the sick. He was ever looking forward to greater achievements in his profession. He believed that our profession must move, that our civilization must move and this concept was exemplified in his great interest in the younger men coming into the profession. To them his life was a constant inspiration and in their accomplishments he took great pride.

BYRON B. DAVIS

As a lecturer he stood in the front rank. The majority of his lectures were given out of his vast fund of knowledge gained in the school of experience. He was ever ready to give to all the benefit of his knowledge. Typical of this characteristic—during his later years he travelled much and never failed on his return to give his friends the benefit of the things he had learned, describing in painstaking detail the peoples of foreign lands, their modes of living and general characteristics, so that many friends gained much general knowledge as a result of his travels.

"He did his duty well;
He fought for others till at last he fell.
Above his grave we need no column raise,
He lives immortal in our love and praise!"

David T. Martyn, Sr., Columbus, Nebr.; veteran of the Civil war; Chicago Medical College, 1869 (of which he was the oldest living alumnus); practitioner at Clarks, Nebraska, from 1870 to 1876 travelling by saddle horse to serve the scattered settlers for many miles; located in Columbus in 1876 where he remained in active practice in association with several other physicians and surgeons until 1920 when he retired; a beloved physician and a strong pioneer character; member, Nebraska State Medical Association; died April 28, 1933, aged eighty-seven years. A widow, daughter and two sons, Dr. D. T. Martyn, Jr., Columbus, being one, survive.

Edward Chaloupka, Omaha; Creighton University School of Medicine, 1905; professor of obstetrics and gynecology, at his alma mater for the past fifteen years; veteran of the Spanish-American war; died after a long illness, May 2, 1933, aged fifty-three years. A widow, three daughters and one son survive. Dr. Louis J. Chaloupka, Omaha, and Dr. Hugo

R. Chaloupka, Los Angeles, were brothers of the deceased.

Frank H. Wray, Long Beach, Calif.; College of Physicians and Surgeons, Keokuk, 1887; practioner at Omaha for some years up to 1929 when he retired; died at Long Beach May 1, 1933, aged about eighty-three years.

John E. Moore, Shiloh, Ohio, (retired); College of Physicians and Surgeons, Baltimore, 1890; twenty-five years ago a well known practitioner at Alliance, Nebr.; died April 6, 1933, after a long illness, aged about seventy-five years.

Albert R. Mitchell, Lincoln, Nebr.; died May 26, 1933. (Full obituary in July number.)

AUXILIARY NEWS LETTER

The Executive Board of the Woman's Auxiliary to the Omaha-Douglas County Medical Society met on Friday, April 28, at the Paxton Hotel. They were guests of the president, Mrs. C. C. Tomlinson, for luncheon.

Plans for raising money for a contribution to the summer Health Camp were discussed. Final arrangements were left to the Welfare Committee.

* * * * * *

Newell W. Edson, of the department of Educational Measures of the American Social Hygiene Association, addressed the annual meeting of the auxiliary to the Lancaster County Medical Association on Friday, April 28th, at the Y. W. C. A. Mr. Edson is the author of "Status of Sex Education in High Schools", "Love in the Making", "Growing Up", and various other pamphlets and articles.

* * * * * *

Members of the Richardson County Medical Association and the Auxiliary met in March at the home of Dr. and Mrs. H. R. Miner of Falls City, with a covered dish luncheon. Following the dinner meetings of both groups were held.

The doctors decided to cooperate with the members of the American Legion Auxilary in the vaccination and immunization of needy children there. The doctors will furnish their services and the Legion Auxiliary will furnish vaccine and anti-toxin.

During the program Dr. M. U. Burton read a paper on "Tumors of the Mouth", and Dr. A. W. Abts of Humboldt read a paper on "Hemorrhoids".

The Auxiliary made plans for a kit they have devised, used by doctors working on charity cases during the winter. This kit will be exhibited at the Nebraska State Medical Meeting and also at the national meeting in Milwaukee in the summer.

Twenty-four were present at the meeting. Out of town members attending were Dr. and Mrs. J. A. Waggener and Dr. A. W. Abts of Humboldt, Dr. and Mrs. George Egermayer of Shubert and Dr. and Mrs. William Shepherd of Rulo.

* * * * * *

A special meeting of the Ladies' Auxiliary to the Richardson County Medical Association was held on April 27th at the home of Mrs. G. W. Egermayer in Shubert. A luncheon was served by Mrs. Egermayer at one o'clock and was followed by a business session.

Plans were made for the lecture to be given in the high school auditorium May 4th by Miss Lillian Johnson of Omaha, executive secretary of the social service bureau of Omaha. The program will be sponsored by the Medical Auxiliary in cooperation with the Health Department of the Falls City Woman's Club.

The ladies also completed the O. I. kit to be exhibited at the state and national meetings of the Medical Association in Omaha and Milwaukee.

Those present for the meeting besides Mrs. Egermayer were Mrs. H. P. Miner, Mrs. J. M. Greene, Mrs. S. D. Cowan, Mrs. J. C. Gillispie and Mrs. C. L. Hustead of Falls City, Mrs. J. A. Waggoner of Humboldt, Mrs. William Shepherd of Rulo, and Mrs. W. E. Shook of Shubert.

—Mrs. Wm. H. Stokes,
Publicity Chairman.

TUBERCULOSIS ABSTRACTS

Tuberculosis in the American Negro with its high mortality rate is an urgent problem. The literature dealing with his subject has much to say as to the presence or absence of a racial susceptibility of the Negro to this disease. Many of the theories advanced, however, rest on conjectural rather than factual evidence, and there is a notable lack of definite clinical and pathological data.

Pinner and Kasper compared and reported the postmortem findings in 303 Negro and 219 white patients dead of tuberculosis. The study not only points out certain significant differences between the two races, but also throws light on the pathogenesis of tuberculosis in general. An abstract of the article follows.

TUBERCULOSIS IN THE NEGRO

The authors were impressed by apparently significant differences between colored and white patients dead of tuberculosis and decided to replace their impressions by carefully collected data. It has been shown that the most significant factor in the development of tuberculosis is the propagation of lesions within the body, and that one of the most important and probably the only definitely established fact about immunity is the diminution of spread of reinfecting bacilli in a sensitized organism as compared with a non-allergic one. A comparison of white and colored patients dead of tuberculosis as to the relative frequency of lymphatic and haematogenous spread (paying particular attention to the type and extent of metastases) was deemed to be of value in that it would indicate with fair reliability the degree of resistance during life. Some of the more notable findings are as follows:

MILIARY TUBERCULOSIS

Miliary tuberculosis was found at least twenty per cent more frequently in the Negro in every decade of life up to 50 and this is believed to be indicative of a low level of resistance. However, since on the other hand it may indicate nothing more than a mechanical accident, all cases of miliary tuberculosis are excluded from further consideration, and the remaining data deal with 190 Negroes and 185 whites.

HAEMATOGENOUS SPREAD

Pointing out that the absence of metastases does not mean that blood stream invasion has not occurred but may rather denote the degree of resistance (specific or non-specific) to such spread, the authors observe that haematogenous propagation occurs twice as often in the Negroes as in the whites, only grossly visible lesions being taken into account.

LYMPHATIC SPREAD

From the point of view of resistance, spread via the lymphatics regularly occurs following first focalization and indicates presumably that state of resistance which is characteristic of "virgin soil."

Eliminating all calcified foci in lymph nodes since they might be part of the primary complex and taking into consideration only grossly visible lesions, spread via the lymphatics occurred nearly seven times as frequently in the colored as in the white group.

ISOLATED PHTHISIS

In contrast to the foregoing is the occurrence of isolated phthisis or tuberculous disease of one organic system with no evidence of involvement of distant organs, and which would presumably indicate a high degree of resistance.

This type of lesion was present in nearly half the white patients and less than 3 per cent of the Negroes.

DURATION OF DISEASE

This information which was available for 96 whites and 47 Negroes gave a total average for Negroes of 324 days and for whites 995 days.

The authors were aware that the nature of their material (postmortem) imposes limitations, since the differences noted between the two rases are probably more pronounced on the postmortem table than in a sanatorium, and more definitely there than in an ambulant clinic. Nevertheless they feel that the material presented justifies some rather definite conclusions. In summary they find that the differences between Negroes and whites are as follows:

"The Negro shows much more frequently haematogenous and lymphogenous spread after a definite focus of tuberculosis is established; this tendency is indicated, too, by the fact that miliary tuberculosis is greatly more frequent in the Negro at all ages. His foci are more frequently exudative in nature, they are more frequently massive, and more often surrounded by collateral infiltrations or haemorrhagic zones. The most conspicuous of the differences is the much greater tendency to lymphatic involvement. The Negro exhibits at times a predominantly lymphatic involvement, which is an exceedingly rare occurrence in white adults. A generalized nodular tuberculosis occurs in some instances in Negroes which is hardly ever seen in whites. In addition, tuberculosis lesions in the Negro perforate more often than in whites."

These pathological peculiarities in the Negro are submitted as proof of a diminished resistance.

VARIOUS THEORIES ANALYZED

Several writers have offered explanations to account for the lower resistance of the Negro:

(a) It is said that the Negro, having been in contact with tuberculosis for a much briefer time than the white has not as yet had an opportunity to acquire the same measure of "inherited immunity."

The authors reply that this stands on unsafe ground since a true inheritance of acquired immunity has never been demonstrated.

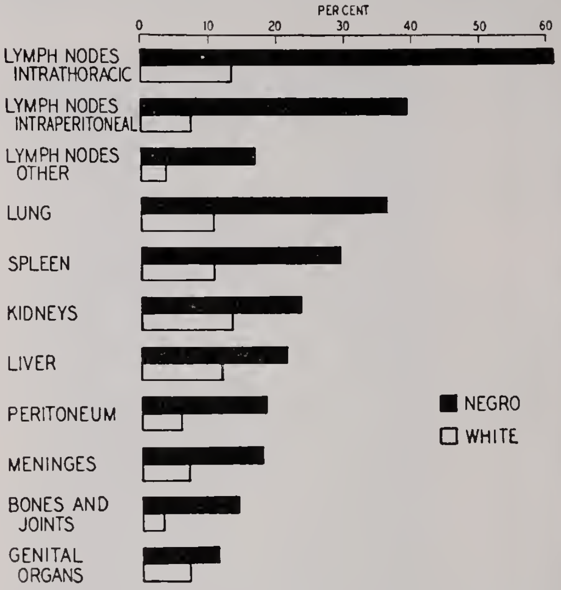
(b) It is said that the Negro escapes childhood infection more frequently than the whites; therefore, an infection acquired later in life occurs in virgin (non-allergic) soil and produces rapidly progressive "childhood type" tuberculosis.

The authors point to the results of large surveys, notably those of Opie and Aronson, which indicate clearly that this theory must be abandoned.

(c) It is alleged that the apparent differences are due to environmental conditions and to the mental attitude of the Negro in regard to disease.

The authors comment that undoubtedly the greater opportunity for infection in crowded, unsanitary quarters from many undiagnosed cases of open tuberculosis is probably one of the most important factors causing the high tuberculosis incidence in the Negro, but it is difficult to see how environmental conditions contribute to the qualitative peculiarities in Negroes. When unfavorable living conditions in Germany sent the tuberculosis mortality soaring, no reports came forth to tell of qualitative changes in the course and in the anatomical character of the disease.

(d) It is suggested that there exists a true racial difference between the two races, which confers high resistance on one and low resistance on the other race.



Metastases in single organs more frequent in Negroes than in whites. (Submitted as partial evidence of lower resistance in the Negro.)

This hypothesis recommends itself strongly to the authors because of the apparent impossibility of explaining the matter by any other alternative, and while this does not constitute proof, it seems at the present time the logical postulate and further studies should show whether it can be converted into an actual fact.

They would deplore violent attacks against such a theory on the ground that its acceptance might paralyze campaign measures now in use.

Pathological Peculiarities of Tuberculosis in the American Negro, Max Pinner and Joseph A. Kasper, Am. Rev. of Tuberc., Nov. 1932.

THE SOCIETIES

The Madison Six County Medical Society held its April meeting in the basement of the Congregational Church, Norfolk, on the 25th, following a dinner served by the ladies of the church. Forty-seven physicians and their ladies were present. The program: "The Thyroid Gland—General Consideration," Dr. R. N. Larimer, Sioux City; "Treatment of the Toxic Thyroid with X-ray," Dr. H. M. McQuestion, Sioux City.

The early recognition of goiter is determined by weight loss, feeling of heat, thirst with inadequate urinary output, perspiration, warm moisture of palm of hands, inordinate appetite and rapid breath, rather than by the classical symptoms of earlier writers.

X-ray treatment of goiter has a distinct field of usefulness now generally recognized in preparation of a patient for operation, and in inoperable cases.

Dr. George Hansen, Madison, reported a case of goiter in a six year old girl.

The case was discussed by Dr. R. H. McBride of Sioux City who had examined the patient and spoke of the condition as very rare and he thought the case mild and probably dependent on diseased tonsils.

The Clay County Medical Society met at the court house, Clay Center, April 13, and elected Dr. E. A. Harvey, Fairfield, president; Dr. Hobbs, Glenvil, vice president; Dr. J. O. Latta, Clay Center, secretary-treasurer. Arrangements were made to hold regular bi-monthly meetings.

The Red Willow County Medical Society holds Sunday meetings. The Hotel Royal, Red Cloud, served them a nice dinner, April 30, after which Dr. T. L. Havlicek, Kearney, talked for about two hours on the subject of tuberculosis, and used x-ray pictures to illustrate his points of interest.

Due to the inclement weather and muddy road conditions, some of the doctors were unable to attend this meeting.

Doctors and their wives, numbering about 50, gathered at the McCloud hotel, York, April 24, for the 6:30 o'clock dinner and speaking program sponsored by **The Sixth District Medical Society.**

Dr. L. Van Es of the college of agriculture at Lincoln addressed the society on "Tuberculosis and Public Health" while Professor Arthur F. Jenness of the department of psychology of the University of Nebraska, spoke on "Hypnotism."

The Monday evening meeting was in the form of a social event with speakers arranging their talks so that the subjects were of interest to the professional men and to their wives.

Dr. L. J. Owen, only Lincoln member of the **Omaha Dermatological Society** was host to the society at the city health department offices, Lincoln, May 2. Dr. Owen presented fifteen cases of various skin afflictions for observation and discussion of the group.

Seven Omaha dermatologists attended and two Lincoln dermatologists were guests at the meeting.

The Eighth Councilor District Medical Society met at Atkinson on the 13th of April. Dr. J. S. Broz, Rushville, recently returned from a year's study in European clinics spoke of his observations on state medicine in various European countries. He said in part: "People have no voice whatever in selecting a doctor and are given scant consideration in the treatment of their cases. Hospital equipment and general surgical technique is very poor." He told that the head doctor, known as "Mr. Professor," is sole arbiter of what is to be done for any patient brought to the hospital for treatment. Country practice is handled by the poorest grade of doctors, many of whom have to farm part time to make a living and who, when they have a serious case, have it transported many miles in a wagon to a hospital because of the scarcity and poor quality of automobiles.

Dr. R. E. Kriz of Lynch read a paper on "Shock, its Diagnosis and Treatment." Dr. Kriz cited the increasing number of such cases produced by automobile accidents and other causes incidental to the machine age. He covered the subject thoroughly and was followed by a general discussion from the doctors present.

The Phi Delta Epsilon of Creighton Medical School put on quite a pretentious program, a symposium on Rheumatic Heart Disease, May 4, at the Blackstone hotel. The program: "Pathological Physiology" by Dr. Charles M. Wilhelmj, "Exiology and Pathology" by Dr. B. Carl Russum, "Pharmacology" by Dr. Herbert F. Gerald, "Nutrition," by Dr. Victor E. Levine, "Acute Rheumatic Fever" by Dr. Isaac Sternhill, "Electrocardiography and Diagnosis" by Dr. Raymond L. Traynor, "Prognosis and Complications" by Dr. Maurice C. Howard, and "Treatments" by Dr. John R. Kleyla. Morris Lev, New Yory city, president of the fraternity, gave a brief history of the question to open the symposium.

The **Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society** met at Wayne, April 27. A covered dish dinner was served cafeteria fashion at the spacious home of Dr. and Mrs. C. T. Ingham, about fifty physicians and wives participating. The scientific program was given in an uptown hall, as follows: "The Pathological Physiology of Menstruation," Dr. Chester H. Waters, Omaha; "Deep X-ray Therapy," Dr. A. P. Overgaard, Omaha; "Agranulocytic Angina," Dr. Lucien Stark, Norfolk.

Dr. Waters conceives dysmenorrhoea in young women to be an endocrine disorder, amenable to treatment by remedies of the theelin order and not to cervical dilations and like surgical procedures, since most of these cases on examination are found to have infantile uterine development. Dr. Overgaard spoke of a new deep therapy machine recently installed in the Covenent hospital, and among other things suggested that all cases of carcinoma of the breast be rayed 3 to 6 weeks before operation, but not just a few days before operation. Dr. Stark commented on six cases in his work, all of whom promptly died in spite of early use of much lauded remedies promptly administered.

Mrs. C. A. Roeder, Mrs. C. C. Tomlinson, Mrs. C. W. Pollard and Mrs. C. H. Waters, Omaha, Auxiliary officials, participated in the dinner and held a conference with the local Auxiliary members.

The **Otoe County Professional Society** held their last meeting of the year at St. Mary's hospital in Nebraska City, May 12. The summer months meetings will be abandoned, the June, July and August meetings being passed. The association will take up again, however, the second Monday in September.

Mrs. Stuhr, Omaha, talked on "The Nurse of Today." She is executive secretary of the Nebraska State Nurse Association for District No. 2. Mrs. Stuhr's talk explained the courage of the bedside nurse and the cooperation between the nurse and the doctor which is necessary to give the patient the best care.

L. T. Hunt, D. D. S., Lincoln, spoke on "Reform With Thinking" and told how necessary it was for the dentist and doctor to cooperate at all times to give the best treatment to clients. Dr. Hunt is chairman of the legislative committee of the Nebraska Dental Association.

Preceding the doctors' meeting the association had a dinner at the Grand Hotel with their wives as guests.

The regular monthly meeting of the **Nebraska State Pediatric Society** was held at the Lincoln General hospital, Lincoln, on May 11th, with dinner at the hospital. Following dinner, Doctors Thompson and Teal of Lincoln gave a very interesting presentation on "Posture."

The **Hall-Merrick-Howard County Medical Society** met April 27, at the St. Francis hospital, Grand Island, for the monthly meeting. A dinner was served at 7:00 o'clock by the Sisters of St. Francis.

The scientific meeting began by a paper on "Aspects of Infant Feeding," by Dr. Robert E. Harry of York. Following this excellent paper a very good paper was also presented by Dr. J. Y. Racines of Palmer, on "Varicosities and Chronic Ulcer of the Leg."

—Amil Johnson, Sec'y.

The **Tri-State Medical Society** (of Dodge, Washington and Burt counties) held a meeting at Oakland, April 24, with about forty-five physicians and ladies present at a dinner given in the city hall.

Dr. William Jepson, Sioux City surgeon and early day physician at Oakland, was present as an honor guest and gave a talk on some important points in the diagnosis and treatment of surgical affections.

Dr. Warren Thompson, Omaha, gave a very interesting talk on "Pulmonary Malignancies." Dr. A. J. Cameron, Herman, indulged in "Reminiscences and Experiences of Thirty-three Years in Practice." These experiences were both humorous and instructive. His presentation of the pleasures and vicissitudes of country practice were unusually well presented.

HUMAN INTEREST TALES

Dr. George B. Salter, Norfolk, has opened an office at Pierce.

Dr. H. A. Williams, formerly of Omaha, has located at Talmage.

Dr. N. H. Blakely is reported dangerously ill at his home in Wahoo.

Dr. A. W. Anderson has been appointed city physician of West Point.

Dr. I. Lukens, Tekamah, has become the head of the local Lyons club.

Dr. H. S. Andrews, Minden, has been elected chairman of the local board of education.

Dr. Hodson Abbott, New York City, visited his father, Dr. C. E. Abbott at Minden, recently.

Dr. T. C. Stander, Denver, Colorado, visited friends and relatives at Louisville, Nebr., last month.

Dr. B. A. Finkle, Lincoln, lost a medical bag from his car parked in front of a hospital, recently.

Dr. A. R. Everett, Kimball, has gone to Chicago to take special work at the Cook County hospital.

Dr. and Mrs. G. F. Zarbaugh, Deadwood, S. D., former Nebraskans, visited at Wilber over Easter.

Dr. E. A. Bennett, Omaha, gave a talk on "Psychiatry" before the Fremont Kiwanis club last month.

Dr. Harry G. Morris, formerly at Creston and Newman Grove, has located at Santa Maria, Calif.

Dr. Fred Wurtele and Dr. Fred Clarke, Jr., North Platte, recently spent a short time at the Mayo clinic.

Dr. Paul Sullivan, formerly of the Battle Mountain Sanitarium, Hot Springs, S. D., has located at Rushville.

Dr. G. H. Bentz, Kearney, suffered a broken leg and broken pelvis in an auto collision the middle of April.

Dr. F. M. Heacock, Lyons, gave a talk and demonstrations on first aid before the local high school recently.

Dr. Thomas A. Lynch, Omaha, has returned from interneships in Philadelphia and will practice in Omaha.

Dr. F. D. McCarthy has moved from South Sioux City to Sioux City in association with Dr. William Cremin.

Dr. C. T. Gritzka, Talmage, after a seven months enforced vacation due to a broken leg, has resumed practice.

Dr. M. A. Hoover, Kearney, has been elected chief medical examiner for the A. O. U. W. grand lodge of Nebraska.

Dr. Gale Boyd, Central City product, has become an assistant to Dr. McKenty at the Royal Hospital of Montreal.

The partnership heretofore existing between Dr. A. E. Gadbois and Dr. Leo J. Hombach, Norfolk, has been dissolved.

The medicine case of Dr. R. L. Hart, Kearney, was stolen lately, looted of its narcotics and cast away by the roadside.

Dr. E. L. MacQuiddy gave a lecture on "Air Conditioning" before the Omaha Air Conditioning Association, recently.

Dr. F. W. Heagey, Omaha, gave a talk before the West Benson school association on the "Early Diagnosis of Tuberculosis."

Dr. Adolph Sachs was elected president of the Omaha-Midwest Clinical society, succeeding Dr. B. B. Davis, recently deceased.

Dr. H. A. Lange, Sutton, has recently been appointed to service in the Veterans' Bureau and assigned to duty at Tucson.

Dr. Howard Hamilton has become president of the Omaha-Douglas County Medical society and Dr. Rudolph Rix, president-elect.

Dr. Margaret Koenig, Waterloo, has gone to Europe with the Inter-State group on a clinical tour to include Leningrad and Moscow.

Dr. G. E. Charlton, Superintendent of the Ingleside State hospital, recently spoke before the Hastings Y. M. C. A. on "Mental Diseases."

Dr. R. B. Preble, professor of medicine at Northwestern University, Chicago, visited his daughter at Elgin, Nebr., the latter part of April.

Dr. George H. Hansen, Madison, recently gave a lecture on "Tuberculosis," illustrated by x-ray pictures, before the Madison Woman's Club.

Dr. W. H. Crawford, for 18 years a physician at Rushville, has moved to Omaha and has accepted active duty in the army for a period of six months.

Dr. C. D. Evans, Sr., Columbus, for fifty-one years Union Pacific surgeon, was honored by the Union Pacific Old Timers' Club at a banquet at Columbus, May 6.

Dr. Wendell C. Phillips, former president of the American Medical Association, says that 10,000,000 Americans have impaired hearing as a result of common colds.

Dr. Azalia Smith was elected president of the Omaha branch of the Women's Medical society; Dr. Mattie L. Arthur, vice president, and Dr. Esther I. McEachron, secretary-treasurer.

Dr. P. B. Lonergan, for the past two years at Wisner, has returned to his former location at Bloomfield. It is understood that some special community inducement was held out to him to do so.

Pre-Medic day is an annual event at the University of Nebraska College of Medicine. This year, on the 6th of May, 195 pre-medical students from different colleges in Nebraska assembled for the event.

Dr. J. P. Lord of Omaha spoke on "Prevention and Correction of Deformities" before the International Society for Crippled Children at Wichita, Kan., this week. J. A. Rodman, president of the Nebraska society, also attended.

Dr. G. W. Townsend, former Atkinson physician who for many years has been practicing in Denver, was cleared recently of a murder charge brought against him as the result of the death of an army nurse following an illegal operation in June, 1932. Dr. Townsend denied he performed the operation. He admitted treating the nurse after someone else had operated. He was acquitted by a district court jury.

Dr. G. E. Charlton, superintendent of the Ingleside State Hospital for the past two years, has been transferred to his former position as superintendent of the Norfolk State Hospital. It is stated that since he suffered removal of the gallbladder last fall, he has not regained his full strength and the Norfolk position will be less onerous. Dr. J. C. Nielsen, who has had charge of the Norfolk institution the past two years will be transferred to the Ingleside State Hospital as superintendent. The Ingleside institution is the most important in the state and to attain to the headship is considered a promotion.

Medical experts are divided as to whether it is safer to kiss or shake hands. That depends.—Atlanta Constitution.

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THE USE OF CARBOHYDRATES IN THE DIET AND TREATMENT OF INFANTS*

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PART TWO

CARBOHYDRATE IN NUTRITIONAL DISEASES

There are certain disorders of nutrition occurring in infancy, which metabolic disorders with constitutional effects have a far more reaching scope than simple intestinal derangements. Carbohydrates play a considerable role in these diseases.

While there is great confusion as to the terms by which these nutritional diseases are known, I shall follow the clinical classification of Finkelstein. who termed the simplest form—simple dystrophy.

The metabolic disturbance here involved is due to the fact that the infant is not receiving enough food, or the food he is receiving does not sufficiently provide for his growth and development.

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*Read Oct. 28, 1932, at Fall Clinics, Bryan Memorial Hospital, Lincoln, Nebr.

Simple dystrophy occurs most frequently when an insufficient amount of carbohydrate is being used in a cow's milk formula. It may also occur where carbohydrate is sufficient, but fat is excessive in the cow's milk mixtures, which may be composed of cream and milk, top milk, or fat rich whole milk.

If the 1:2 ratio of carbohydrate to fat be altered by too low a sugar ratio in the diet, or if the sugar be normal and fat too high, the metabolic balance will be disarranged.

Sufficient carbohydrate in the diet acts powerfully, not only to cause a normal metabolism of fat, but also to bring about a retention of proteins and salts and water in the cells and tissues. The proper retention of water in the tissues causes a marked soaking up of tissue colloids and a normal tissue turgor.

As has been shown, dystrophy may occur not only from underfeeding of carbohydrate, but also may be produced because one or several of the essential food elements are in insufficient quantity or are omitted from the diet.

This may be true if starch be given in excess, and the diet becomes unbalanced because protein, fat or salts, singly or in combination become deficient.

Thus we see that through an unbalanced or deficient diet a nutritional and metabolic disturbance has occurred to which we give the name "simple dystrophy"—Briefly, the chief symptoms are stationary weight or failure to gain; slight temperature fluctuations; irritability; pallor and dryness of skin; ammonical urine; and constipation rather than diarrhea with the presence of the so-called soap stools. I should like to momentarily digress and investigate this constipation and soap stool formation in greater detail.

As has been pointed out, if fermentation is active, putrefaction cannot take place, and without putrefaction soap stools cannot be formed. Excess of putrefaction can only occur when there is insufficient quantity of carbohydrate in the diet.

Soap stools are hard, light colored, dry and putty-like, and alkaline in reaction. They contain more magnesium and calcium soaps and less free fatty acid and neutral fats. The reduction of bilirubin to colorless urobilinogen accounts for the light color. Mineral metabolism is effected, in that calcium, magnesium, potassium and sodium are excreted in excess. This causes more ammonia to be formed in the body—and an increased excretion of ammonium salts in the urine.

Thus we see an excellent example of the complicated interreactions which occur in nutritional disturbances, and how difficult it is to consider only one element in the process.

The absence of sufficient carbohydrate, the change from normal fermentation to putrefaction, from acid to alkaline reaction, the increase in mineral excretion, and the production of soaps, with less free fatty acid and neutral fats are all involved in the disturbed nutrition of the infant.

The treatment of such a nutritional disorder consists in the balancing or strengthening of the diet. In infants of this type the carbohydrate requirement is sometimes quite high, and it will be found necessary to increase the sugar in the diet.

The question of which sugar to add in such a condition is interesting. I have previously tried to point out, that under ordinary circumstances, with a healthy normal infant, all sugars will act satisfactorily enough so far as gain in weight and normal development are concerned. There is no convincing clinical proof that one is superior to the other.

However, it is in the correction of nutritional disturbances that a great difference in the action of sugars may be seen. The addition of maltose-dextrin preparations, malt soups or cereals will prove most efficacious in clearing up a simple dystrophy. As has been already noted, a greater quantity of dextrin, starch or malt may be injested with a lesser amount of fermentation than any of the other sugars, and this is exactly what is needed for the treatment of the condition; to add more sugar of a type not easily fermentable. They are safer because they can be added in greater quantity, with less danger of excessive fermentation. They may be added up to from 5 to 10% of the total milk formula. The slow, continuous, never rapid fermentation, changes putrefaction to fermentation, acid reaction from alkaline, and fatty acids and neutral fats replace the soaps and aids in the retention of important minerals.

Milk sugar, cane sugar or maltose alone, must be added with great caution and in appreciably lesser amounts, due to their more rapid fermentation.

Whatever sugar be added, it must be remembered that caution is advisable, as the changed nutrition often decreases the tolerance of the infant far below that of a well baby.

DYSPEPSIA

Diarrhea in nutritional disturbances will here be designated as dyspepsia, in contrast to the soap stool constipation of simple dystrophy, just discussed. The diarrhea in dyspepsia is due to excessive fermentation from various causes.

Excessive milk feeding, especially high sugar, or starch feeding, combined with high fat content may lead to fermentative diarrhea. Infectious processes of various kinds may increase the fermentative action and result in an increase in peristalsis with diarrhea. In cases in which exclusive starch feeding is long continued, diarrhea may result not only from inanition, but also from increased carbohydrate fermentation. The one-sided diet, with the deficiency of salts and protein, results in a diminished secretion of diastatic starch splitting enzymes. As a result the starch is incompletely broken down and not rendered capable of being absorbed, and bacterial fermentation of the excessive amount of starch in the intestinal tract occurs.

Such an infant may have been ill with some digestive disturbance, and have temporarily been given barley water, or rice water, or some starch mixture. The baby improves temporarily on this food, and the mother. of her own accord, continues to feed the baby in this manner. She keeps on with this carbohydrate feeding until eventually the baby falls ill again. The infant may lose weight and the temperature may fall below normal. The skin sometimes loses its elasticity and becomes pale and gray. At other times, water is retained in the body, and the baby becomes dropsical.

I have already referred to the fact that such a baby's resistance becomes lowered, that infections develop, and that keratomalacia may occur. We may ask what measures will cure such a baby, and the answer is; "Give him a properly balanced diet, one that contains the necessary food substances, before his tissues and organs have been damaged excessively." Why do these babies suffer such marked nutritional disturbances? Why this condition of minus nutrition? Did the starch poison them?

The baby who suffers from starch injury was not damaged because he received only starch, but because he failed to receive certain substances for growth and development. He also received very little protein. He was receiving no fat. There was no readily combustible sugar. Lastly, and probably most important of all, there were no accessory food-stuffs,—there were no vitamins. Perhaps we might say that it was not so much an error of commission as an error of omission.

By way of emphasis, we may say that it is not always what we give in the way of diet, but sometimes what we fail to give that causes disease and nutritional catastrophy.

The treatment of dyspeptic diarrhea must aim at measures to prevent the excessive fermentation. Withdrawal of easily fermentable substances, and treatment of any infections are first indications.

What are the food substances which we may employ to check fermentation? A withdrawal of all food for a short time, six to twelve hours, with the administration of a bland fluid as water or tea will give a brief rest period.

Then small quantities of breast milk, dilute milk mixtures without fermentable carbohydrate, or protein or buttermilk may be started. Sugars must be added gradually, and those only with the least tendency to fermentation. for it is an excessive fermentation which we are attempting to combat. Malt-dextrin preparations, wheat flour, corn starch, rice flour, and oatmeal may be cautiously added to the diet. Increasing the protein in the diet tends to check fermentation by changing the acid intestinal contents to alkaline, and reducing fermentation by causing putrefaction.

DECOMPOSITION

If a nutritional disorder such as simple dystrophy or fermentative dyspepsia is allowed to continue unchecked for a period of time, the infant will become emaciated and weakened with a loss of considerable weight and a decreased tolerance for all food-stuffs. The skin loses its turgor and becomes pale, and the loss of subcutaneous fat causes such an infant to present a wrinkled senile appearance.

Many of those infants show a parodoxical reaction due to their decreased tolerance. If sufficient food be given to supply their caloric needs they will show no gain in weight, indeed, they may even show a loss of weight. This decreased tolerance due to a prolonged disorder of metabolism and body nutrition is exhibited not only for carbohydrates, but for all food substances. In treating such an infant a food low in sugar must first be offered—and only as the condition improves, and the tolerance increases, may the carbohydrate foods be cautiously added.

ALIMENTARY INTOXICATION

An infant following a mild or severe nutritional disturbance may suddenly develop an acute toxemia, with fever, nervous manifestations, diarrhea and vomiting. This we shall term "alimentary intoxication." This condition may also result from an enteral or parenteral infection.

It is not within the scope of this paper to discuss in detail alimentary intoxication. It was at one time supposed that an excess of carbohydrate, when given with milk or whey, might have a pyrogenic effect and that the fever of alimentary intoxication might be due to this cause. However, the protein in the whey is probably a much more potent factor in the production of fever than the carbohydrate, for when infants are fed on high protein feedings a fever and a mild alimentary intoxication may be produced. The process is probably not a simple toxic result of protein products. but is also complicated by dehydration, acidosis and a general disturbance of water metabolism in the body.

In alimentary intoxication the infants tolerance for carbohydrate as well as other food-stuffs is usually greatly diminished, and the sugar in the diet must be carefully added, after the toxic symptoms have subsided. In feeding these infants protein milk, a small addition of carbohydrate is necessary in order that a sufficient energy value may be provided.

PARENTAL USE OF GLUCOSE

In the two nutritional diseases which I have just mentioned, namely decomposition and alimentary intoxication, the water and mineral metabolism of the body are vitally altered.

Dehydration is a prominent symptom of both conditions. This term implies not only loss of water from the body, but includes the depletion of mineral salts and protein as well. Depletion of these substances are brought about not only through their loss in the urine and feces, but great amounts may be lost through the skin, as sweat, and the loss of water in the breath in infants suffering with intoxication may be 50 per cent greater than normal.

Dehydration may lead to a diminished circulating blood volume, an actual concentration of the blood, (anhydremia), to decreased blood pressure and to circulatory disturbances.

Glucose is indicated, in order to overcome the toxic condition, the acidosis, the dehydration and the circulatory disturbances met with in alimentary intoxication, and in order to supply a medium containing an easily assimalable source of energy and food.

Glucose may be administered in various ways. It may be given by mouth or per rectum, subcutaneously, intraperitoneally, or intravenously. In an infant suffering with a nutritional disease accompanied by vomiting and diarrhea, the retention of the glucose administered by mouth or per rectum is difficult. A nasal catheter may be employed to give glucose solution by continuous drip method, and frequently a considerable amount of fluid may be administered in this fashion. Glucose administered subcutaneously and intraperitoneally is less rapidly absorbed than when given intravenously. The optimal strength of the glucose solution to be employed is from 5 to 10% concentration. Glucose solutions of 20% strength have been employed, but this concentration has been held by most observers to be too high. The glucose solution for subcutaneous, and intraperitoneal use may be combined with physiologic saline or Ringer's solutions. Recently Hartman of St. Louis has suggested a buffered solution, which is satisfactory for conditions in which either alkalosis or acidosis are present.

The amount of fluid to be given at any one time will vary considerably. In a large infant it may be possible to give from 100 to 200 c.c. of glucose solution by hypodermoclysis. Care should be taken not to over-distend the subcutaneous tissue as a painful slough may develop. No type of fluid should ever be injected intraperitoneally if tympanites is present. Glucose solution combined with physiologic saline solution may be injected into the peritoneal cavity, care being used not to over-distend the abdomen. Glucose solution may be administered intravenously in 5 to 10% concentrations. Care should be taken that freshly distilled water be used in diluting the sugar solution. Approximately 10 cc. of glucose solution per pound of body weight may be given safely in from ten to fifteen minutes.

Recently Schick and Karelitz have recommended the continuous intravenous administration of glucose solution. Employing Hendon's method of venoclysis by cutting down on a vein and inserting a canula, a 5% solution of glucose in physiologic salt, or Ringer's solution was continuously administered. The average duration of the continuous drip was 36 hours, and from 500 to 800 cc. were given in 24 hours, by this method.

The amount of fluid which must be given within twenty-four hours will vary with the infant's weight and severity of his illness, and with the method of administration. The extreme instability of water retention in these infants is shown by their tissues, which are lacking in turgor and elasticity, and yet the fluid given them is poorly retained.

In general it may be said that these infants will require from one to two liters of fluid per day. The average amount being about 1200 cc.

The value of glucose to these infants is chiefly in supplying them with energy and fluid, and sparing the utilization of their own body proteins. The fluid content of the blood is increased, and the circulation is aided and blood pressure is raised. The fats are rendered capable of complete combustion, and acidosis is relieved. Diuresis is increased and the excretion of toxic products through the kidneys is favored.

The use of blood transfusions supplementing the glucose therapy, need only be mentioned as a valuable aid in treatment, but will not be discussed here.

ADDITIONAL USES OF GLUCOSE

It will be evident from the theoretical considerations previously discussed. that the use of glucose enterally and parenterally has rational indications, and is of value in the treatment of a variety of disorders in the diseases of infancy and childhood.

Sugars given by mouth, as has been pointed out, are of therapeutic value in the prevention of food disturbances; and their addition to the diet is corrective if certain nutritional disorders already exist. Glucose solutions given by mouth or rectally, or injected subcutaneously, intraperitoneally, or intravenously have definite indication and are of decided value in the treatment of a variety of diseases.

These include the nutritional disturbances, decomposition and alimentary intoxication, already mentioned and, also such diseases and conditions as, infectious or septic diseases; pre- and postoperative use, shock, toxic states due to burns or acute poisonings, liver insufficiency with or without icterus, acidosis, or cyclic vomiting, and in cardiac weakness. Finally, the use of glucose in nephritis, coeliac disease and in diabetes will be briefly mentioned.

It does not seem necessary to elaborate on the use of glucose in each specific disease. The indications for its use depend on some general underlying principles which may be briefly enumerated.

1. As a source of energy: In such diseases where fasting occurs, or the intake of food is prevented by vomiting, it will be found that the glycogen reserve will soon become exhausted, often within 24 hours. Also in febrile diseases an increased demand for glucose is made upon the organism. The administration of glucose in this condition will meet the demand which is normally called for from the liver, namely—it will supply dextrose in a usable form. It will maintain the energy balance of the body at an optimal point in infection and supply needed energy in febrile diseases.

2. In hypoglycemia: In conditions where the liver is unable to supply enough dextrose from glycogen to maintain a normal blood sugar, and where hypoglycemia exists, the glucose will raise sugar in the blood stream to the normal amount.

3. In acidosis: When the glycogen reserves are used up, and there is an insufficient supply of available sugar for the complete oxidation of the fats into carbon dioxide and water, the fat metabolism will result in ketosis. In the incomplete combustion of fats, ketone acids are formed, which must combine with the body bases and buffers and this alkaline reserve diminution results in acidosis. By addition of glucose we stop this incomplete combustion of fat, and overcome the cause of acidosis.

4. Combats dehydration by supplying fluid: In those conditions where dehydration is present, where body fluids and minerals have been lost, where blood volume is concentrated and blood pressure is low, the administration of glucose by injection will supply fluid, increase blood volume, relieve anhydremia, raise blood pressure, improve circulation, increase diuresis and aid in the retention of the mineral elements of the body.

5. Detoxicating action of glucose in acute poisoning: It has been demonstrated both clinically and experimentally that glucose has a neutralizing effect on certain acute poisons, and its use in such cases is therefore indicated. In toxic conditions following extensive burns, in acute arsenical poisoning, the use of glucose by injection has aided in detoxicating the patient.

It has also been experimentally shown that the tolerance for opium and potassium cyanide poison is increased in animals, if glucose is injected into the animal's circulation, and the toxicity for these two poisons is diminished in those animals who have previously received glucose.

The special use of sugar in the treatment of acute nephritis should here be mentioned. In this instance its use is that of a sparer of protein in the diet, as well as being an energising bland food. Strauss of Berlin recommends the use of sugar days in the treatment of acute nephritis in children for these reasons.

EXTERNAL USE OF SUGAR

Brief mention should also be made of the use of sugar in the treatment of wounds and catarrhal conditions. This usage of sugar dates back to folk lore remedies, and to ancient times. The ancients used powdered sugar for the cleansing of ulcerated and inflamed surfaces. It has also been used as a dressing for small wounds, and in solution in chronic catarrhal conditions of the nasopharynx.

SUGAR IN COELIAC DISEASE

The condition termed coeliac disease or chronic intestinal indigestion, is a chronic condition whose onset is usually in the latter half of the first year. Infants suffering with this disease are pale, emaciated babies, with large protuberant and often tympanic abdomens. The characteristic stools are frequent, large, pale and foul smelling. While the cause of this disease is unknown, it is said to be especially likely to follow a heavy carbohydrate diet. There is probably also a constitutional tendency to the disease.

The evidence seems to point to a fault in the absorption and utilization of carbohydrate and to a lesser degree of fat. A flattening of the blood sugar curve after the injestion of sugar by mouth, seems to indicate an interference with the absorption of monosaccharides.

In the treatment of this condition, it has been shown that if all starch foods and most of the fats are omitted from the diet, and high protein feedings employed, the condition will improve. Ripe bananas, ripe banana powder and stewed fruits and vegetables may be added to the diet, as sources of carbohydrate. It will be remembered that the sugars derived from bananas and fruits are, sucrose, dextrose and levulose. It is probably the latter carbohydrate, levulose, that is capable of absorption, and is an aid in the therapy.

DIABETES AND SUGAR TOLERANCE

One could scarcely conclude any discussion of carbohydrate metabolism. without at least mentioning diabetes mellitus. In recent years excellent advances have been made in the treatment of this condition in children. Before the advent of insulin, this disease was considered rapidly fatal in a child. However, with the newer methods, children have been followed for a number of years, with remarkably encouraging results.

In diabetes it is the failure to properly utilize the absorbed glucose, due to a lack of insulin secretion in the organism, which is the defective mechanism involved. The sugar is excreted in the urine and increased in the blood. This inability to store and oxidize carbohydrate, affects fat metabolism, and results in ketosis. In diabetic coma, solutions of glucose reinforced with insulin have proven a valuable therapeutic aid.

CONCLUSION

I have attempted in this presentation to trace the physiologic indications, and the metabolism of sugar in the normal diet. I have also emphasized the possible injuries produced by a diet deficient or excessive in carbohydrate; and finally I have pointed out, the indications for the therapeutic uses of sugar in a variety of disorders which are of common occurrence in infancy and childhood.

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THE TRAINING OF A SURGEON*

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According to the by-laws of the Nebraska State Medical Association the Chairman of the Surgical Section is required to deliver an address on Surgery. Accordingly I wish to take a few minutes of your time to discuss one phase of this vast subject—namely. The Training of a Surgeon.

Our whole economic and social structure is changing. Civilization in spite of temporary setbacks must and does advance. Medical Science has kept her place in the march of progress. Her achievements in the last quarter of a century may well fill us with pride, but there are still many problems to be solved. The demands on the surgeon of the future will be greater than are the demands on the surgeon of today. Increased efficiency, more exact knowledge, more intense training will be necessary. The future of surgery depends not on those coming after us—it depends on us! We must lay the foundation for those who follow, that they may fill our places, and fill them better than we have.

There is a general feeling that not only Medical Education but all education is not doing the best for the younger generation. Old ideas and old customs are difficult to discard, and what is worse, they are sometimes discarded for more shallow and superficial methods. Medical Education leaves much to be desired. We crowd into a four year course a mass of material, a very large part of which the student cannot and does not retain. We turn out young men saturated with theory but weak on practical knowledge. Yet conditions are vastly superior to those of twenty years ago. It was not uncommon in those days for the student, immediately following his graduation, to take up the practice of medicine and surgery. If he were ambitious to be a surgeon, as so many young students are, he stumbled along, gaining his knowledge in the school of bitter experience. Too often the experience was more bitter to the patient than to the physician. The law even today makes it possible for the student, at the completion of his four year course, to engage at once in the practice of surgery. Fortunately no one avails himself of this liberal provision of the law. Students generally realize their limitations and seek interneships to round out their education with the practical side of medicine and surgery.

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The interne year is the most important and should be the most valuable of the whole medical course. Upon the training the young physician is given in the hospital depends very largely his future success and his future value to the community. This places a very great responsibility upon the hospital. I wonder if the hospital and its staff always realize the importance of their position. I wonder if they always realize that in the teaching of the interne they hold the future of Medicine in their hands. I wonder if they always come up to the expectations of the interne who comes anxious and eager to learn that he may take this place in the ranks of the good physicians. The duty of the Staff to the interne is a vital one. Its duty is to teach. It matters not whether the hospital is or is not connected with a Medical College. In fact, a very small percentage of hospitals have school connections. The staff of every hospital should be organized to teach, to disseminate medical knowledge and to do it systematically. An interne who shows a preference for surgery should be encouraged, provided he has shown himself to be a student and a worker. He should be taught how to assist, and should be allowed to see and feel the pathology at the operating table. When he has had this experience he should be permitted to do some work always, however, under supervision. The average interne properly handled and properly taught will at the end of the year have a fair knowledge of surgical procedure, but he still needs assistance and supervision. One should not open an abdomen unless he is able to meet any surgical emergency that may arise. To accomplish this one must have considerable training and experience. The beginner may perform a laparotomy for an apparently simple appendix and find complications that would tax the knowledge and skill of a mature surgeon. Under such circumstances the patient's position is not an enviable one.

When an interne who is desirous of doing surgery, finishes his hospital training, he either goes to some post-graduate school or large institution where a three year course may be had, or he locates in some city and relying on the experience obtained in his interne year he attempts to do major surgery. In the former case his training will be adequate, but in the latter case he will not yet be fitted to do major surgery. There are exceptions of course. There are men who endowed with natural surgical ability, plus hard study and uunusual opportunity, leave their hospital at the end of their interne year and do good surgery. These are, however, the exception. When the interne on leaving the hospital locates himself, he should select the hospital to which he wishes to send his work. He should make contact with the hospital authorities and make known his desires and qualifications. If the hospital finds on investigation that he is a graduate of an accredited school and has served his interneship in a hospital of good standing, it should be ready to give him the necessary help and supervision. Some hospitals when the new surgeon comes to the institution send one of the men on the staff as an observer to see whether or not the work is properly done. It seems to me it would be more proper to send a helper who would be available when needed. Certainly such an attitude would be more fair to the young man and keep him from taking his work to the hospital that is more concerned about the financial remuneration than about the character of the work done. The hospital through its staff should maintain this supervision over the young surgeon till he has had sufficient experience to be on his own. He should then be obliged to take a state board examination and prove his practical ability, and then and then only receive a state license to do surgery. Certain it is that no one should be licensed to do surgery till he has had the training to do so. The time will come when one will be prevented by law from doing major surgery till he has proven his capability by state examination. If some such plan as I have outlined were put into operation it would work no great hardship on the young man, neither would it prove of any detriment to the hospital or its staff. I would not expect the established surgeon to take up the young man and build up a practice for him. A financial arrangement could be made between the two, open, above board, and meeting all the requirements of American College of Surgeons and the American Council on Medical Education. Such an arrangement would benefit all concerned. To bring about this change legislation is necessary. The agitation for such a program must come from within the profession. However, I do not believe this is the proper work for state and local societies; but rather that of the National surgical societies and the Council on Medical Education. It should be national in its scope. That some such arrangement must and will come I firmly believe, and that it will raise the standards of surgical efficiency I think no one will deny.

PROGNOSIS IN SURGERY OF THE ABDOMEN

DIAGNOSIS AND PROGNOSIS FROM THE VIEWPOINT OF THE SURGEON

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The taking of the history of a patient is an art, and the too common stereotyped methods are reprehensible and were never performed by those men who have made history as wise physicians in the accurate discernment of internal and concealed pathology. These men were eminent in the niceties of differentiation because they valued highly the history of the patient, in fact, they were exceedingly careful in taking it, lest error creep in and divert their deductions from the truth. Maurice Richardson, New England's most eminent experienced surgeon, drew particular attention to this, his own case histories reaching almost one-hundred volumes in number.

My personal acquaintance with Doctor Richardson, and as an absorbent of his teachings has always been of great assistance in recognizing one's limitations and the fallibility of human nature. Richardson's experiences and skill were so widely acclaimed that he was one of the few men who could afford to teach by telling of his failures, and know when it was humanly possible for others to avoid them.

In reality opportunities give the surgeon preeminent advantages to become, first of all, *the diagnostician* in concealed pathology. It is his work in exposing the pathology of the living which has disclosed to both physicians and surgeons the interpretation to be taken from the history, and the clinical findings, to much of which the x-ray has contributed.

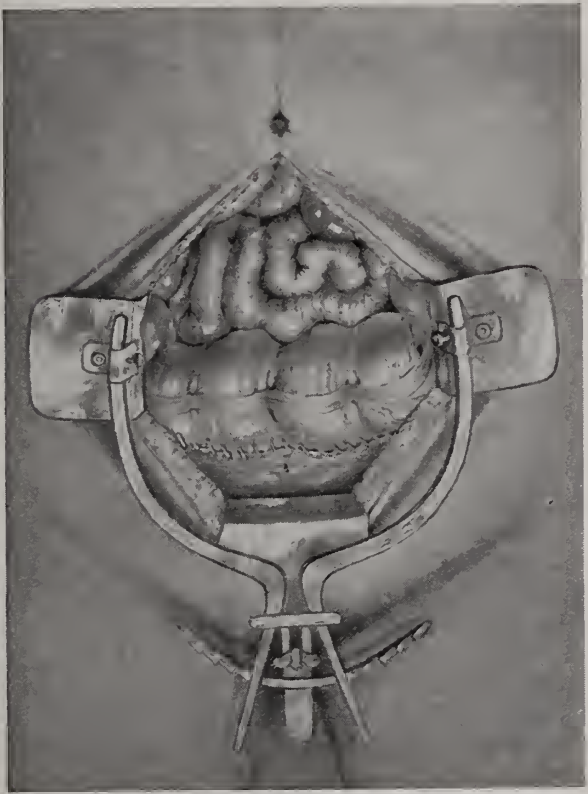
Richardson emphasizes the point that "The surgeon should be, first of all, a prognostician, for prognosis includes, with diagnosis, many other things. He should be able to tell his patient what will happen, what may happen, what may not happen, and what will not happen. He must know not only the exact nature of the lesion, but its extent. He must know how to estimate its severity and its probable effect. He must be able to gauge the patient's powers of resisting. He must know the operator's skill and reliability. He must take into account the environment, the operating-room, sick-room, nurses and family."

He must learn, as Richardson puts it in discussing some types of pancreatitis, whether to operate or not, (I had a fatal case of this kind in the University hospital last week). "In surgery we are too apt to say at the demonstration of acute abdominal lesions that the pathological condition admitted of no cure other than surgical, and to say this especially in acute diseases like appendicitis, cholecystitis and the like. And if we fail, we say that the patient died in spite of the operation. Many times this is true, but many times it is not. The operator frequently turns the scale against what would have been an effective natural effort at repair, or at least at restraint. This is seen in the tearing apart of adequate adhesions against acute spreading infections, whether of stomach, gallbladder, appendix or Fallopian tube. I am not saying with reference to prognosis that surgery's good does not vastly exceed surgery's evil results; but I am calling attention to the fact that a good outlook may be turned into a bad one by insufficient consideration of the force and effectiveness of the unhampered natural processes. This surgical interference with disease affects the prognosis according to the skill and experience of the operator, and especially in the critical case. It is an injudicious surgical interference in the proper meaning of that word."

Operation upon the gallbladder and bile ducts have become so common, especially so since the linking together with slight abdominal distress and the Graham-Cole dye test of gallbladder function, that people in otherwise good health and nutrition are becoming classified too often as surgical material and taken out of the hands of the practitioners of internal medicine.

As a rule when there are no contra-indications to an abdominal operation and the distress of the patient warrants the procedure, operation should be performed. In the hands of the experienced operator they are safe. Disasters are usually camouflaged in some way—how much better to acknowledge the mistake, if there was one, so that others might profit by it.

Where real pathology of the gallbladder and bile ducts exist the time for and the type of operation is the question and experience has taught much, for example: in the absence of infection except that of a mild degree, cholecystectomy is an operation to be practiced. A gallbladder relatively quiescent, containing stones, should be removed.



J. E. Summers' peritonization in pelvic surgery, with special reference to the use of the sigmoid flexure of the colon.

In 1911 I read a paper before the American Surgical Association in Philadelphia (*Annals of Surgery*, July, 1911), in which I expressed my opinions based upon my experience at that time about some of these matters in reference to the gallbladder and gall ducts, and my experience since and observations of work of others, widely corroborates those at that time.

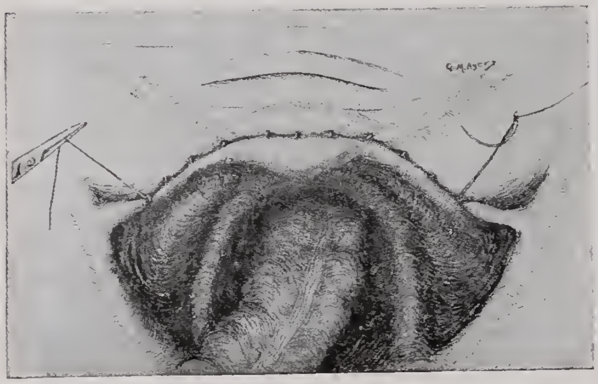
Hydrops of the gallbladder from an impacted calculus in the cystic duct or a stricture closure of the cystic duct may best be treated by cholecystectomy. However, I must take issue with those who advise cholecystectomy in any acute infection within the gallbladder extending into and beyond the cystic duct. Likewise I feel confident that more lives will be saved and fewer complications follow by avoiding cholecystectomy when infective inflammations are apparently confined to the gallbladder, especially so, should there be gangrene of the gallbladder.

All acute infections of the gallbladder, empyema, gangrene either involving the mucosa alone or the muscular walls and peritoneum should be treated by simple incision and drainage after a protective gauze packing off of the peritoneal cavity. I have known disaster to follow cholecystectomy in such cases—the crushing of the cystic duct and its artery, more especially of the poison laden lymphatics; the trauma to the peritoneum passing from the gallbladder neck to the gastrohepatic omentum, can and does in some such instances lead to a thrombophlebitis and fatal infections. The latest experience seems to indicate that the common duct should be drained too, in spite of the slight trauma required. The removal of gallstones from an infected gallbladder should be done with great gentleness. In fact, at times it is much wiser not to attempt their removal until the circulation is better established by the relief of tension following free incision of the gallbladder fundus. The spooning out of gallstones is always accompanied by more or less trauma to the mucosa of the gallbladder, thereby in seriously infected patients opening up fresh foci for attack by the invading germs. The expression of enough of the stones through a free incision into the gallbladder fundus by passing the fingers of one hand under the gallbladder and raising it up against the under surface of the liver or against the fingers of the other hand as indicated, will limit trauma, reduce tension, and admit of temporary drainage. In these instances if the common duct is enlarged considerably and the gallstone history of relatively long standing, this enlargement may not be a compensatory change, but one due to an impacted stone in the lower end of the common duct, and this duct should be incised, the stone or stones removed, and drained. I have the notes of a number of patients, teaching the wisdom of the practice advised, and I have seen death follow the more ideal technic. One particular fact has been impressed upon me: Whenever upon incising an infected gallbladder of a very ill patient, there is a foul odor to its discharging contents, no further trauma should be inflicted within the gallbladder. If in such a case it is possible to reach the common duct it should be incised and drained.

Open drainage and protective gauze packing are the best life-saving measures—these are emergency operations, and it is wonderful how seldom secondary operations are required.

Years ago in an emergency (*Journal of the American Medical Association,* March 10, 1900), I made an anastomosis between the common bile duct and the duodenum; there was a stricture of the cystic duct and also of the duodenal end of the common duct. The patient recovered. This was the first operation of this kind in America.

In my Philadelphia paper, I wrote: "I have had made for me and use horse serum, each 10 cc. containing 10 grains of calcium lactate, which I believe has been as a prophylactic measure of service in preventing possible hemorrhage in cholaemic cases." (Park Davis & Company made these ampoules for me.)



J. F. Baldwin's pan-hysterectomy peritonization technique.

Space does not permit a discussion of obstructive jaundice and its prognosis, but I would highly commend a booklet by Waltman Walters, entitled "Obstructive Jaundice: Physiologic and Surgical Aspects." Walters has done the most advanced work on this subject of late years.

Intestinal Obstruction—Again, a careful history and a physical examination by the intelligent use of one's senses should make an early diagnosis if circumstances give a physician the opportunity. A late or too late diagnosis can be made by a tyro. The prognosis depends upon much common sense and little surgical skill. An early diagnosis should more than possibly admit of permanent relief of the obstruction—at least the early operation should relieve the life threatening situation, also as well may the late type be relieved by the simplest procedure possible of external drainage.

In acute gangrene of the small bowel, the involved area should as a rule be exteriorized carefully so as not to interfere with the circulation. The loops for a short distance above and below the gangrene should be tacked together, the peritoneal cavity protected, and then the gangrenous loop freely opened and enveloped in a copious dressing. Resection must not be done. If the patient lives late surgical repair is relatively simple.

In acute or chronic obstruction of the large intestine, never make a primary resection, drain proximally to the obstruction, preferably the caecum, later "in the cold" do your operation. The large intestine with our modern instruments and types of suturing can be dealt with as an extra peritoneal organ, with slight danger of infection. It is safe surgery if only good judgment is used and is carried out.

Almost every general practitioner, obstetrician and surgeon believes he can do good pelvis surgery, and in most instances he can, but it would be safer done if a little more pains were taken in technique and he does not get it all from his books.

J. F. Baldwin of Columbus, Ohio, the most experienced man in hysterectomies (6.000) probably in the world, says:

"In the neglected cases, in which tubo-ovarian abscesses have developed, with extensive destruction of ovaries and tubes, a complete hysterectomy should be made, including the cervix. The uterus itself, in these cases, is almost invariably more or less infected; is a distinct menace to health and even life. In these conditions the peritoneum of the true pelvis is extensively involved and frequently, indeed, destroyed, leaving on removal of the diseased organs an oozing raw surface. In such cases the technic which I have used in large numbers of cases and have found exceedingly satifactory, but which I find is apparently used by few others, is to attach the round and broad ligaments into the vault of the vagina at each side so as to provide ample support for the vagina, split the posterior vaginal wall down, or nearly down, to the bottom of the cul-de-sac, pass into the vagina the ends of two or three strips of washed iodoform gauze, and then lightly pack the rest of the strips into the cul-de-sac until the pelvis is comfortably filled, but not too tightly. The sigmoid is then swung around so as to cover this gauze fluff and is then attached by a continuous catgut suture to the healthy peritoneum at the brim of the pelvis. Care should be taken that there is no sharp angulation of the sigmoid at any point, but that it is left with smooth curves. Occasionally it is too short, and under those circumstances the cecum can be swung over so as to close that side of the pelvis. In this way there is no raw surface at any point, and the abdominal cavity is completely shut off from the more or less raw or infected pelvis. Any oozing that follows escapes directly into the vagina, and the gauze can be readily and safely withdrawn at the end of a week.

"The surgeon who first advised this use of the sigmoid was John E. Summers, of Omaha, (*Surg., Gyn. and Obstet.,* August, 1911, pp. 125-7). His suggestion though of the greatest value seems to have been quite generally ignored."

This technique is one of the most important procedures in some instances of pelvic surgery that I know of, whether or not the uterus is removed in operating for tubo-ovarian abscesses or in supra vaginal amputation of the uterus for fibroids, it is the rare operator whom I see, and I watch them carefully, who so peritonizes his pelvis that no raw suture line is seen. The illustration which I have taken from a paper illustrating the finish of Dr. Baldwin's usual technique where it is not necessary to use the sigmoid, differs in some respects from that usually done, but its main effect is to cover all raw surfaces. He sutures the round ligaments in the sides of the vagina, never ties them, they have no arteries to bleed.

My technique described by Dr. Baldwin, of transposing and suturing the sigmoid so as to make the pelvic operation an extraperitoneal one is a valuable procedure. The mesentery forms a shelf against which the small intestines lie and cannot reach the raw surface of the pelvis, and thus escapes the danger of infection and possible adhesion obstruction. The illustration taken from the large colored illustration in *Surgery, Gynecology and Obstetrics,* 1911, is self descriptive. In some instances I leave a small opening in the mid-suture line for an extra-peritoneal drain.

The late John B. Murphy was so impressed by the importance of this peritonization that he asked my permission and used this colored drawing as the frontispiece of *The Year Book of Surgery* (1912), of which he was editor.

Most textbook writers recommend placing the sigmoid in the pelvis and tucking down the omentum over it, but how long do they keep the small bowel away from the pelvis and its raw surface?

I was amused lately in seeing an operator carefully pull the omentum down to the pelvis, thus making a fine cover to keep the bowel from adhering to his incision, *but* it was a roof only to hide the small intestine gliding down into the pelvis.

Why so few surgeons have familiarized themselves with the use of the sigmoid as indicated I do not know. It is valuable. I have a patient in the University hospital convalescing nicely from a pan-hysterectomy for cancer, and the prognosis could not in this instance have been so favorable had not the sigmoid been used. One of my younger surgical friends has had fine success in six or seven dangerous cases, he says the use of the sigmoid was of great value to his patients.

A STATISTICAL STUDY OF 616 CASES OF DIABETES*

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IN TWO PARTS—PART I

INTRODUCTION

The diabetic death rate for 1932, in Nebraska, was the highest it has been in 13 years. The Statistical Bulletin of the Metropolitan Life Insurance Company(1) shows that their rate was 23.3 per 100,000, or 8.9% higher than in 1931, and the highest for which the company has records. They note(2) that this increase appears to be general throughout the country and state that it is particularly hard to understand during a period when over-indulgence in food was probably curtailed. They call attention to the fact that in England during the war the rate decreased from 13.2% per 100,000 in 1916 to 10.6% in 1928. The same was true in France, Germany, and the United States. Why then is there this marked increase in diabetes? They give as possible reasons: Increased interest since the discovery of Insulin, larger numbers of laboratories at work, the unprecedented rise in the number of applicants for life insurance, and the increased number of older persons in the community, particularly older women and especially persons of certain foreign stocks, all of whom have shown to be above average in susceptibility to the disease. Studies by this company have shown that among males the diabetic death rate, since the use of insulin, has gone down steadily in all groups up to the age of forty-five; that there has been no important change between the ages of forty-five and sixty-five; but there has been a distinct and significant rise at sixty-five. Compared with this, females, during this period, have shown no decline except in childhood and early adult life. Between the ages of thirty-five and forty-five there is a slight rising tendency and after fifty-five the increase has been very sharp. The outstanding features of the diabetes of today are the prolongation of the lives of diabetic children, the replacement of the coma by arteriosclerosis as a cause of death, and the increasing number of women and older individuals with the disease.

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*From the Medical Department of the University of Nebraska College of Medicine.

There are a large number of diabetic deaths in the state of Nebraska, as evidenced by the figures that we are presenting on Chart I. Statistics from the University hospital show that during the first twelve years, 1 out of 116 patients admitted was a diabetic; for the succeeding three years, 1 out of 89; and for the last year, 1 out of 79. May we not conclude, from these figures, that diabetes is on the increase in Nebraska and that some of these diabetic deaths might be prevented? Are we recognizing these cases sufficiently early and are we doing for them all that the present state of our knowledge warrants? With the idea of attempting to determine whether there is some means of preventing this increasingly large mortality, a statistical study has been made of 616 cases of diabetes, taken from the University of Nebraska hospital and private records.

CHART I

Year	Total Number Deaths in in Nebraska	Diabetic Deaths	Percentage of Deaths Caused by Diabetes
1920	13,755	257	1.86%
1921	12,025	245	2.03%
1922	12,454	302	2.42%
1923	12,621	284	2.25%
1924	12,389	230	1.85%
1925	12,475	253	2.03%
1926	12,767	224	1.77%
1927	12,359	273	2.20%
1928	13,662	300	2.19%
1929	13,374	301	2.25%
1930	13,280	291	2.19%
1931	12,905	303	2.34%
1932	12,923	321	2.48%

ETIOLOGY

A consideration of some of the etiological factors may be helpful.

AGE

Two people over forty develop diabetes to one under forty but seldom do they develop diabetes under forty unless they are fat. Joslin[(3)] states "63% of our patients were over forty years of age." The age incidence is well shown below:

AGE	PERCENTAGE
1-10	4.43
10-20	12.43
20-30	9.70
30-40	10.44
40-50	16.49
50-60	18.43
60-70	20.54
70-80	7.55

SEX

According to our statistics, as well as those of most writers, we may conclude that more women than men are treated for diabetes and, according to the mortality statistics, more die of the disease. This has been true of our series; 53% of our 616 cases have been women, 47% men. The tendency to over-eating and under exercise with its attendant obesity may be the explanation for this finding. The diabetic incidence reaches its peak in childhood at puberty, about twelve years, and at the menopause, about 49. Possibly changes in sex glands may be related to its onset.

CONJUGAL INCIDENCE

We have found diabetes in both husband and wife twice in this series, probably due to a similarity of dietetic habits rather than to an infection or other cause.

HEREDITY

Our experience has been that the more carefully the history is inquired into the more commonly previous history of diabetes in some member of the family will be found. Wendt and Peck[(4)] found a hereditary history in 65% of their private patients and 33% of their clinic patients. Any individual with an hereditary history of diabetes should watch for symptoms of this disease and never allow himself to become fat. All members of a diabetic family should be examined at regular intervals that symptoms may be detected early.

OBESITY

63% of a group of University of Nebraska cases gave a history of obesity. Adams[(5)], in a study of the history of obesity at the Mayo clinic, states that 80% of their cases were more than 10% overweight at some time before diabetes began; that 54% were still overweight after having had diabetes for varying periods. Mental workers are more prone to develop diabetes for the reason that they are more prone to become fat as a result of overeating and under-exercise. Of 1,000 cases of diabetes whose records were examined by Adams[(5)], 579 gave a history of occasional or continuous overeating and he contends that with education the incidence of diabetes could be reduced, since obesity is such an important precursor of the disease. Joslin(3) believes it is the excessive amount of total food rather than the amount of carbohydrate that does harm. The statistics quoted above from European countries, during the period of the war, bear out this statement. Total dietary restrictions lessened the incidence of diabetes. There is little question, therefore, as to the role obesity plays in diabetes. Most authorities take it for granted that it is the chief predisposing factor and all contend that the most rational way to prevent and control diabetes is to control obesity.

INFECTIOUS DISEASES

Adams(6) has shown that the onset of diabetes occurs more often in fall, winter and spring when infections are more common. During this time the individual overeats and under-exercises. Convalescents from the various infectious diseases have an enormous appetite and are frequently over-fed in the period of relative inactivity when the pancreas is probably below par and needs rest. This overstrain of a weakened function may be one of the etiological factors in the development of diabetes and one of the reasons a patient will give a history of diabetes making itself evident shortly after convalescence from an acute infectious disease. Wendt(4) reports that 3.9% of his cases suffered from tonsillitis shortly before onset of the diabetes. Influenza has been given by a large number of our cases as a cause. While no definite infectious entity can be said to cause diabetes, the fact that diabetes can be precipitated by infection, especially in persons with a tendency towards the disease, is almost universally recognized.

SYPHILIS

The incidence of syphilis in the diabetic patients at the Peter Brent Brigham hospital, the Von Noorden clinic, and the Joslin clinic is less common than in the general population, but Rabinowitch(7) found that gangrene is five times as prevalent in diabetics with syphilis than in those without. Possibly the frequency of gangrene in the Negro is due to syphilis for it is well known how prone syphilis is to attack the blood vessels of the colored race. Energetic anti-luetic treatment of one of our patients had no effect upon his carbohydrate tolerance. Wendt and Peck(4) found lues in 3% of 1,073 cases of diabetes.

GALLBLADDER

In recent years the frequency with which diseases of the biliary tract occurred in diabetes has been brought to attention as a possible cause of diabetes. 5% of our cases gave this history. The biliary tract lies in close relation to the pancreas and in most instances they have a common duct emptying into the duodenum. It may be possible for infection to travel up the pancreatic duct and cause a pancreatitis. Adams(8) of the Mayo clinic, 1925, studied 6,500 patients with gallbladder disease and 1,101 patients with true diabetes. Of the total 7,601 patients, 138 had both diabetes and gallbladder disease. One of forty-seven patients with gallbladder disease had diabetes, and one of eight with diabetes had symptoms of gallbladder disease. Of the 138 who had both gallbladder disease and diabetes simultaneously, 89% had had symptoms of gallbladder disease before diabetes set in, while 11% had diabetes first. 25% of his cases were improved by gallbladder operation. Stubbs(9) studied 100 diabetic patients and found that 38 showed positive evidence of biliary tract involvement. He pointed out that there is a free anastomosis of lymphatics and blood vessels between the pancreas and gallbladder and there was no barrier of resistance between the two. Rabinowitch(10) states that 80% of the cases with gallbladder disease at the Montreal General hospital showed hyperglycemia. He concluded that nine times as many patients with disease of the biliary tract had diabetes as would be expected by the laws of probabilities.

COMPLICATIONS OF DIABETES

COMA

Since the discovery of insulin in 1922, coma deaths have markedly decreased. Still, a study of the statistics of the Metropolitan Life Insurance Company(11), shows that it was a terminal condition in 48% of the cases in 1925 but had dropped to 41% in 1929. These statistics are taken from the general averages throughout the country but in the best hospitals, today, uncomplicated coma deaths are rare. A need for education, however, along the lines of prevention and cure of this dread condition is evident. "Coma is almost the only cause of death in diabetic children and represents neglect." Joslin(3). The older diabetics are prone to die from degenerative diseases of the heart, kidneys, and arteries. In this series of 616 cases, 78, or 12.6% developed coma, and 31, or 39.7% died, in most instances complicated by other diseases to which their death might be attributable, acidosis being under control in the larger proportion. Of these 78 who developed coma, 40 were females, 38 were males, the average age was 29 years. The mortality in the private group was lower (20.6%)

than in the University of Nebraska group, as would be expected inasmuch as private cases are seen earlier and treated more promptly. The University group, in most instances, were more severe and there was a greater delay in treatment owing to the lack of understanding of the seriousness of this condition by the patients, their financial condition, and the distance from the hospital.

CAUSES OF COMA

INFECTIONS

In the diabetic patient, a trivial cold, or any of the common infections such as measles, tonsillitis, bronchitis. middle ear disease, all of which may be overlooked or treated lightly, may be the etiological factor in the development of an acidosis. 60% of our coma cases gave a history of infection or showed the infection on post mortem examination. In a previous paper on this subject we(12) stated that infection speeds up the metabolism and stops appetite; consequently, the patient is thrown upon his endogenous supply of carbohydrate. The supply in the form of glycogen in the liver and muscles is exhausted early. He then starts burning his fat and protein. Fat and protein burn in the fire of carbohydrate, in the absence of carbohydrate they "smoke" and are burned only to the ketone stage—acidosis results. All cases, therefore, should first be examined for infection and treatment should be directed toward that infection as well as toward the coma resulting from it.

DIETETIC EXCESSES

By straining a weakened function, dietetic excesses may exhaust the body's supply of insulin and leave none for normal metabolism of protein and fat. Dietetic excesses increase glycosuria which causes polyuria which in turn causes dehydration and a concentration of ketone bodies in the blood. Twenty-two per cent of our coma cases gave this history.

LACK OF INSULIN

In 5% of our series, lack of insulin was given as a cause for the development of their coma. In the diabetic patient previously treated by insulin and diet, the omission of the usual insulin dosage is likely to result in coma. The patient should be instructed to increase insulin in the presence of infection and never to omit insulin unless sugar free.

OTHER CAUSES

Emotional upsets and over-exertion are considered by some to be causes of acidosis. The increased metabolic rate of hyperthyroidism may predispose the hyperthyroid diabetic to acidosis by increasing his metabolic demands. One of our coma cases was complicated by exophthalmic goiter and required very large doses of insulin to control it. We have, also, seen one case of diabetic coma that was due to placing too much confidence in an improperly prepared Benedict's solution.

PATHOLOGICAL PHYSIOLOGY OF COMA

Acidosis develops gradually over a period of hours or days as a consequence of the failure of the tissues to oxydize glucose in sufficient amounts. This is manifested clinically by increase in the glycosuria. This in turn causes polyuria. At the same time, there is marked water loss from the lungs due to increased pulmonary ventilation. Dehydration of the tissues results, characterized by dry, parched tongue, dry skin, soft eyeballs. The therapeutic indication is evident. Water must be restored to the tissues by the method that will give the most prompt relief, by mouth, by hypodermoclysis, intraperitoneal infusion, or intravenous injections. The latter method, however, should be used cautiously as there is danger of throwing an added strain upon an already weakened heart. Water by rectum is too slow and uncertain.

The way to insure the oxidation of large amounts of glucose is to use large doses of insulin and in the majority of cases this may be all that is necessary. Our last twelve coma cases have required an average of 100 units before the patients were conscious.

In order to prevent ketosis and burn up the ketone bodies that are already present in the blood, it is necessary to insure the utilization of enough glucose. If acidosis is not profound, glucose in the blood may be sufficient, but, in the later stages of the intoxication, this is not the case and glucose must be supplied. Assuming that the blood makes up ten per cent of the body weight, and that the total glucose in the blood varies from 30 to 75 grams, (more is constantly formed, however, but the excretion through the kidneys is also constant) we find that this is insufficient glucose, even if it is entirely utilized, to correct this disorder in fat metabolism. It is wise, therefore. to administer glucose by vein or mouth. This has the added advantage of preventing the danger of insulin shock. Foster(13). One must remember that in diabetic acidosis the patient is dying of acidosis, not of hyperglycemia or hypoglycemia, and that he will recover and become conscious before he becomes aglycosuric or before his blood sugar is brought to normal. The dosage of insulin will vary with the case, the size of the patient, and the duration of the acidosis.

An initial dose of 30 to 40 units for the average adult followed by doses every half hour depending upon urine tests, is usually required. With a catheter in the bladder this can be done safely and the condition of the patient and response to insulin noted promptly. Warmth, special nursing, gastric lavage, cleansing enemas, and cardiac stimulation are also indicated.

PROGNOSIS OF COMA

Coma must be regarded as a serious condition and coma patients only recover as a result of hard work and the use of methods of treatment based upon sound physiological principles. "It is easier to prevent 99 cases of acidosis than to cure 1." Joslin(3) Children and young adults stand coma better than older individuals probably due to the fact that they are better able to stand damage to heart muscle and other vital organs but it is well to remember that they are only 48 hours removed from coma if gross errors are made in their diet or insulin dosage(14). With the increasing knowledge of diabetes and its complications among both laymen and the profession, we should expect that acidosis will be prevented and coma deaths will become a rarity. However, some diabetic patients will still die after having been in acidosis although they may be rendered aglycosuric and their blood sugar brought to normal because of some irreversible change that has taken place in body protoplasm.

(To be continued)

UTERINE DISPLACEMENTS

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The two most common abnormal conditions found in the female pelvis are endocervicitis and displacements of the uterus. These two conditions are largely the result of childbirth and of infections. They are of particular interest to the obstetrician and gynecologist. Obstetrics is said to be the specialty of the general practitioner, so it should be of particular interest to him. He cares for the majority of obstetrical cases, and it is during this time most of the causes of pelvic abnormalities can be found and remedial measures instituted.

The normal supports of the uterus in the pelvis which have to do with displacement and prolapsus, have been and still are, a subject for discussion. The most commonly accepteed view at present is that of Tandler and Haban who believe that the uterus is supported from below and not held up from above. This support is the deep pelvic fascia, or the upper pelvic diaphragm, which corresponds closely with the original theory of Oldhausen. This fascia with the connective tissue and areolar tissue about the blood vessels, contains a few muscle fibers. It passes across the pelvis as a sling, attaching to the white line, a fibrous arch extending from the pubic bone to the ischial spine, on either side. Extending backward inserting into the last sacral vertebra and the median raphe behind the rectum. It is attached to the uterus at the juncture of the body and cervix, the fascia passing up along the lower uterine segment, lending support to the uterus. There are no definite ligaments and only a few muscle fibers. This support is above and entirely separate, from a mechanical standpoint, from the perineum. The perineum, or lower pelvic diaphragm, does not in any manner support the normal uterus.

The uterus is normally anteflexed in the pelvis. The mechanics by which this position is maintained are many. The normal muscular supports of the uterus may be dispensed with, and the normal uterus will remain anteflexed. Here the so-called utero-sacral ligaments, part of the deep pelvic facia, hold the cervix and lower portion of the body of the uterus, in a relatively fixed position, which, in turn tends toward the anteflexion of the fundus. The broad ligaments assist in the prevention of lateral deviation of the uterus, but allow free forward and backward motion.

The round ligaments are essential in maintaining the anteflexion of the uterus, but do not support it in the pelvis. These ligaments, being largely muscular, act as guy ropes, assist in bringing the fundus anterior to the pelvic axis. By so doing they keep this organ anteflexed and any intra-abdominal pressure will increase this position. We must remember the uterus is a freely movable abdominal organ, and it is necessary that all the above supports be elastic and relatively movable. With each inspiration or expiration the intra-abdominal pressure is changed. If the uterus, by its development, assisted by the deep pelvic fascia and the round ligaments, has the fundus anterior to the axis of the pelvis, then with each increase in the intra-abdominal pressure the fundus will be forced forward. Also the weight of the intestines on the posterior wall of the uterus will help to keep the anterior position.

The term "congenital displacements of the uterus" is often applied when found in the nullipara's pelvis. The uterus in the foetus, at the time of birth, is an abdominal organ, lying above the brim of the pelvis, and nearly parallel to the long axis of the body. Rarely the uterus is found retroflexed in the foetus, usually slightly anteflexed. This anteflexion is normally increased as the natural shape and position of the uterus is assumed. The term "congenital displacement" is applied to a developmental condition and is not usually correct.

In speaking of displacements of the uterus we must remember it never remains in one position for any length of time. Any change in the position of the patient causes a change in the position of this organ. So we should not call it a pathological condition unless it remains permanently in the position and produces symptoms. All uncomplicated displacements in the nullipara, are developmental and associated with abnormalities of other abdominal organs as prolapsed stomach, colon, general visceroptosis. They are found in the under-developed woman, in which the nervous system and the sex organs are anatomically and physiologically maldeveloped. The cervix is usually small in diameter, stenosed, conical, and, due to the shortening of the anterior vaginal wall, is placed in the anterior portion of the vaginal vault. These patients suffer from menstrual disturbances, and are usually sterile. The gynecologist who treats these cases surgically does them no good. and oftimes does them a great harm. This condition is usually found in young girls and the treatment, if necessary, is largely constitutional, not local.

Occasionally we will find this condition in one who has a normal physical and nervous development. The uterus then will be normal in growth and proportion. This is an accidental development in an otherwise normal individual and does not call for any special treatment as it does not produce any abnormal physiology.

The acquired displacements are caused by trauma, accident, infectious processes, and conditions outside of the uterus such as tumors. Traumatic causes are accidental or post-puerperal. Accidental displacement is very uncommon but may occur. It may follow a fall or sudden extreme exertion with its resultant increase in intra-abdominal pressure. If the fundus in its normal excursion in the pelvis is posterior to the line of force this sudden pressure may force it backward and downward. In school girls, who habitually neglect emptying the bladder, the uterus may be pushed backward by the overdistended bladder and the intra-abdominal pressure is then exerted on the anterior wall and a posterior flexion is produced. Habitual constipation will also help to produce a similar change, although it usually produces a retroversion.

At least 75% of retrodisplacements and prolapses of the uterus follow abortion and childbirth. Postpartem retro-flexion may be primarily a uterus which was retrodisplaced previously, or secondarily one acquired during the lying-in period. The lower uterine segment and cervix is greatly dilated during pregnancy and labor. This relaxation persists for a number of days during the puerperium. When the uterus regains its normal muscular tone it assumes an acute anteflexion, which gradually resumes a normal anterior position. With the patient on her back for a week or ten days the heavy uterus tends to be retrodisplaced. The irritability of the bladder is decreased in the early puerperium; if it is allowed to become over-distended, the fundus will be pushed posterior to the line of intra-abdominal pressure and will tend to produce posterior displacements. These factors with a low grade of infection, oftimes from a diseased cervix, will produce a sub-involution with a large heavy uterus. Damage to the deep pelvic fascia, in combination with above factors, produces the majority of the abnormal positions. Due to the type of tissues in the deep pelvic fascia a change in the position of the uterus in the pelvis is either developmental or traumatic. A prolapsus of the uterus is a hernia, and follows the general rule of hernia, being increased in amount by excessive intra-abdominal pressure. If the pelvic fascia in the under-developed individual is not sufficiently strong we may expect a primary prolapsus with no visible injury to the fascia. Most often it is due to trauma, caused by unskilled, untrained. or neglected obstetrics. We do not sufficiently realize the large amount of irreparable damage done to this essential structure at the time of labor. During a normal labor and ofttimes in the so-called easy, rapid labors, this fascia is over-stretched, with a permanent disability following unless the proper treatment is early instituted. Frequently the improper use of the abdominal muscles during the first stage of labor, the improper use of forceps or breech extraction through an undilated cervix is responsible.

The improper use of pituitrin, and neglect of cervical repair, are other common causes of prolapsus from trauma. Occasionally excessive traction on the cervix during vaginal operations may cause prolapsus. The sagging vaginal wall, following injury to the lower pelvic diaphragm, causing traction will produce prolapsus. The deep pelvic fascia once damaged, cannot be repaired by the gynecologist no matter how great his skill. Remember the lower pelvic diaphragm can be repaired but the deep pelvic fascia cannot.

Infection of the pelvis, with subsequent adhesions, may cause displacements of the uterus both anterior and posterior. Abscess in the cul de sac. salpingitis, pelvic peritonitis, all enter into this condition by the production of scar tissue and formation of adhesions. The uterus may be adherent in the cul de sac without previous pelvic infection. If two peritoneal surfaces are constantly rubbed together with sufficient pressure; adhesions will occur.

Probably no condition in the human body has been accused of producing so many symptoms, both local and general, as uterine displacements. As long as the uterus is a freely movable organ and retains its normal size, it may be considered, from a physiological standpoint, as normal in the posterior position as in the anterior, and should produce no symptoms.

The developmental anteflexed uterus nearly always produces dysmenorrhea. severe backache and colicky pains preceding menstruation. Undoubtedly there is accompanying a maldevelopment of other pelvic organs, tending to produce the disturbance in the menstrual function. General therapy is indicated as strengthening of the weak physical constitution, and building up the nervous equilibrium by means of psycho-therapy. At times this fails and we are forced to dilate the cervix thoroughly, and insert the stem pessary. The genital organs must be free from infection if a stem pessary is used. The pessary is left in the uterus 8-12 weeks. This usually gives relief for a year or more. Pregnancy, with the thorough dilatation of the cervix during labor, usually gives complete relief of symptoms.

In the developmental retrodisplacements we do not find many symptoms produced in the individual who is otherwise normal anatomically even after they begin their sexual life. In the individual who is poorly developed anatomically the uterus is only part of the general condition. These patients complain of scanty and painful menstruation, backache, intermenstrual pains in the lower abdomen, headache, and other ill-defined symptoms. We must not center the attention of the individual upon the uterus but must give them general treatment. Do not operate in a case of developmental retroflexion unless it produces definite symptoms.

In the acquired displacements we have a condition producing a great many of the local and many of the general symptoms in the female. The most common condition is a passive congestion of the uterus and adnexa. This is due to the arterial walls being thicker and more resistant, and are not affected by the kinking and stretching in the broad ligaments. The veins, with thin and less resisting walls, are liable to be compressed and the return flow of blood is impeded. This gives a primary edema with a secondary tissue proliferation and a uterus with thick, hard walls. This chronic change, incorrectly termed "chronic metritis", gives a sensation of weight and fullness in the pelvis. The endometrium becomes congested and thickened the so-called chronic endometritis, with the accompanying chronic leucorrhea, and a profuse and prolonged menstrual flow. The menstrual period usually aggravates the backache produced by pressure on the sacral plexus. Backache in the female is a common complaint and is due to many causes.

The tubes and ovaries are always displaced with the uterus, producing a thickening of the tissues of both. The tunica albuginea of the ovary becomes thickened and prevents the Graffian follicle from rupturing. At each menstrual period another small cyst is added to the number present and produces a cystic degeneration of the ovaries.

The bladder may be pulled backward by the displaced uterus, and produces a frequent desire to urinate. If the vaginal outlet is relaxed, or the uro-genital diaphragm is torn and relaxed. there may be a partial incontinence of urine on exertion. The rectum is often affected by the pressure of the heavy uterus, producing or aggravating an already existing constipation. The disturbance in the venous circulation about the rectum will increase the tendency to hemorrhoids.

Sterility is one of the conditions caused by displacements. In the developmental type, it may be associated with other conditions in the pelvis and produce a permanent sterility. In the acquired form, unless caused by pelvic inflammation, the sterility is not permanent and can usually be relieved by the proper treatment.

Malposition of the uterus is one of the common causes of abortion. It is due to the ease with which hemorrhage may occur in the hyperemic mucosa. The abortion may occur at any time during the first 12-14 weeks of pregnancy. It is true many of these cases do not abort, but the uterus is more irritable and accidental causes will cause the interruption of pregnancy more readily. Nausea and vomiting of pregnancy is accentuated by displacements and will at times be relieved if the uterus is replaced and supported in its normal position.

The diagnosis of displacements of the uterus is made by bimanual examination. In virgins the use of the recto-abdominal method is indicated. The use of the recto-vaginal examination is a valuable but often neglected aid. The pelvic examination, with the patient in the standing position, is most valuable in diagnosing a prolapsus. The speculum does not help, as in flexions the cervix is in its normal position, excepting as it shows the condition of the cervix. The use of the uterine sound as an office procedure, has many dangers and is not advised. The examination is not complete without recognition of the degree of mobility of the uterus. This is obtained by placing the patient in the knee-chest position. Examination under anesthesia may be done when the uterus is not palpable, due to a thick abdominal wall or a small uterus. If possible the cause of the displacement should be found, whether developmental or acquired; traumatic, accidental, the result of infection, or by tumor.

The uncomplicated displacement of the uterus, developmental or acquired, requires no treatment as long as it produces no symptoms. The finding of this type of displacement during a routine examination is best not mentioned to the neurasthenic type of patient.

When found during the examination for sterility, and the uterus can be replaced, the use of a proper pessary. the examination of the cervix, the elimination of pelvic infection, the insufflation of the tubes, and the examination of the semen of the husband should precede any surgical operation. If the woman is very desirous of having children the surgical correction may be done, but not with too much optimism as the causes of sterility are many.

A displaced uterus, complicated with a history of repeated abortion in the first 12-14 weeks of pregnancy should have any vaginal pathology treated and the ligaments shortened. If the woman is now pregnant and no symptoms of a threatened abortion, the ligaments may be shortened without danger of interrupting the pregnancy.

As 75% or more of acquired displacements occur as the result of pregnancy, prophylactic treatment should be instituted at this time. Misplacements follow abortion when the patient gets out of bed too soon, as involution is slow and the heavy uterus will sag downward and backward. Great care in asepsis and antisepsis during labor, preventing infection and sub-involution of the uterus, is essential. Do not force the presenting part through an undilated lower uterine segment and cervix by the improper use of the abdominal muscles during the stage of dilatation. The deep pelvic fascia must not be damaged by too early use of forceps or version. High forceps should never be done.

Time is usually given to the dilatation of the perineal diaphragm which can be easily seen and properly repaired if damaged. Cannot the same time and care be given to the deep supports which cannot be seen and cannot be repaired? Pituitrin is rightly accused of causing damage to these structures if improperly used.

Following labor the bladder should not be allowed to become over-distended as it forces the heavy uterus backward and also predisposes to infection. The proper use of the catheter will prevent this. Do not keep the patient inactive on her back while in bed. She should lie on her abdomen two hours daily after the third day post partem, and continue to do so until the uterus is involuted. The knee-chest position should be started about the time the patient gets out of bed, 10 minutes a day for 6 weeks. If the examination on the 8-10 day post partem discloses a prolapsus, or tendency to posterior sagging, hot douches beginning the third week after delivery will be of benefit. Cervical lacerations, of any extent, should be repaired, either immediately or on the 8th day. as they predispose to prolapsus. These treatments are to be used only if the patient is temperature free.

The examination 5-6 weeks after delivery will give valuable information and should be routinely done. If the uterus is displaced it is because the patient has not followed instructions, the displacement was present before the pregnancy, or the deep pelvic fascia has been severely damaged. The use of the pessary. the knee-chest or monkey-walk, and hot douches will help most of the cases who have not followed instructions, or if the deep supports have not been too severely damaged. Rarely will they help a displacement present before the pregnancy. If no sympomatic results are found in 3-4 months the condition is usually not amenable to local treatment. By this time the passive congestion has produced tissue changes which are more or less permanent.

The pessary may be used as a diagnostic aid, as well as for temporary treatment. It is used in diagnosis to ascertain if the proper replacement of the uterus will relieve the symptoms. If not, a permanent replacement by surgical means will not give the results desired. The pessary is of value in the treatment of sterility, and in those patients with a tendency to abort. With the uterus, being held in the normal position, conception is more likely to occur. The pregnant uterus being held in the upright position until it becomes an abdominal organ will tend to prevent the abortion.

Surgical procedures, in the treatment of malposition of the uterus are satisfactory if used in those cases where the symptoms due to the malposition and those due to other conditions have been carefully differentiated. The operations of correction have not always been well planned or executed and many times instead of helping have proved to be a detriment. The most frequent indication for operation in displacements is the presence of causative and complicating pathology, not the displacement itself. The methods used, and there are many to choose from, should not entail any danger, immediate or remote; as forming a loop in the ligament, predisposing to a strangulation of the bowel. The operative treatment in multipara with relaxed upper and lower diaphragms, should begin with repair of the cervix, of the anterior and posterior vaginal wall, and of the perineum; followed by abdominal section and the proper shortening of the round ligaments. By proper understanding of the mechanics of the supports of the uterus, by the proper care of these supports during labor, by the proper supervision during the post partem we can prevent the majority of the complicated malpositions. By the proper case study, and the selection of the proper surgical procedure, the results in practically all the displacements will be gratifying to the patient and the physician.

PROGRESS OF SURGERY

Review of the Literature for the First Half of 1933.

HERBERT H. DAVIS, M. D., F. A. C. S.,
Omaha, Nebraska.

THYROID

Phemister and Delaney(1) reported a case of thyrotoxicosis, uninfluenced by prolonged and repeated administrations of compound solution of iodine, ligation of both superior poles, extensive subtotal thyroidectomy and extensive roentgen treatment. Improvement then followed bilateral ligation of the inferior thyroid arteries supplying pea sized masses at the lower poles, but the disease soon recurred in severe form and compound solution of iodine and roentgen therapy were again used without benefit. Vegetative endocarditis finally supervened, with a fatal termination. At autopsy no thyroid tissue was found.

The authors have been unable to find reports in the literature of cases similar to this one, but they knew from personal communication with Pemberton that he has had a similar case. The authors stated that the question arose as to whether or not in such cases the thyroid gland is the seat of the disease, as is now generally assumed for thyrotoxicosis. That it is the seat is readily explainable on the assumption that a very small amount of overlooked diseased thyroid may have the necessary effect when other structures, such as the sympathetic nervous system, which are secondarily influenced, are unusually susceptible to the action of its secretion; i.e., hypersensitization of body tissues to a normal or altered thyroid hormone.

THORAX

Powers and Bowie(2) performed electrocoagulation of the pulmonary valve on six dogs, followed by intravenous inoculation with cultures of streptococcus viridans. Acute vegetative endocarditis developed on the traumatized valves resulting eventually in the cusps becoming thickened, fibrous and inelastic, the edges adhering to one another and finally an actual stenosis of the pulmonic valve.

Two of these animals with experimental pulmonary stenosis were subjected to partial resection of the stenosed valve. Because of its comparatively superficial position, the pulmonic valve is relatively accessible to surgical attack. The operations were well tolerated and the animals lived for twenty months without evidence of cardiac decompensation. These results were in marked contrast to those that followed partial resection of experimental stenosis of the mitral valve in which the immediate mortality was 80 per cent and the final postoperative mortality was 100 per cent. The suggestion was made that certain selected cases with congenital pulmonary stenosis may be relieved by surgical treatment.

GASTRO-INTESTINAL DISEASES

For several years Elman(3) has been experimenting intestinal obstruction. In a recent publication he stated that the cause of death in untreated complete high obstruction (stomach and duodenum) is probably a physiochemical one, due to a depletion of water and salts from the blood into the vomitus or obstructed contents. The resulting dehydration could explain all of the so-called "toxic" symptoms. Treatment with a modified Ringer's solution effectively restored the blood to normal, improved symptoms and permitted adequate surgical treatment without risk.

The cause of death in low intestinal obstruction (ileum and colon) was probably different, but as yet there is little convincing evidence that a "toxemia" is present. Distention played a prominent role and the idea was expressed that sudden release of distention may be an important factor in the fatal outcome. The operative treatment was therefore confined in the late cases to gradual decompression of the distended intestine, strangulated bowel being merely exteriorized for later removal.

UROLOGY

Lower(4) had a very interesting article upon the influence of the endocrine glands upon the sex organs, studying especially their relation to the prostate. Any condition which stimulated the pituitary gland and the gonads to elaborate an excessive amount of the male sex hormone resulted in physiologic prostatic hypertrophy. Conversely, castration produced atrophy of the seminal vesicles and prostate, and an increase in the size of the pituitary and adrenal glands. The experiments indicated two ways in which hypertrophy of the secondary sex organs may be prevented. First, by inhibiting the influence of the anterior lobe of the hypophysis, and second, by inhibiting the influence of the gonads. He advised the later by simply dividing the internal spermatic and deferential arteries together with the vas. No sloughing has followed. He performed this in a limited number of clinical cases and the prostates markedly diminished in size. He stated that the series is too small to draw conclusions. Also the case histories were not given.

ORTHOPEDICS

The intra-articular injection of dyes is not a new procedure, though practiced only from the experimental standpoint to determine the absorptive capacity of the synovial membrane and the paths of absorption. Burman(5) stated, however, that the present work of his is the first concerning the gross staining of cartilage by dyes. He found that there are dyes that stain cartilage slightly or not at all, dyes that are diffuse in action, and dyes that are selective. The term "selectivity of action" means that these dyes stain only eroded or degenerated areas in cartilage and leave normal cartilage unstained. By injecting a rather large series of dyes into joint cavities, Burman found that the best dyes to show selective staining of diseased areas in cartilage were eosin, neutral red and lithium carmine. This selective staining would be of definite value in arthroscopy, delimiting, as it does, areas of disease in color, thus rendering visualization easy. The article was of the nature of a preliminary report.

MISCELLANEOUS

DuMortier(6) found that operative incisions in guinea pigs, made and followed with aseptic technique, heal by first intention. Also staphlyococcus aureus hemolyticus implanted upon the intact skin did not cause infection. In thirty animals these organisms were implanted along the line of closure at the completion of the operative procedure. Within four days gross infection was present in all cases and many of a serious and spreading type. In another series in which the organisms were implanted upon the sutured wound, two hours after operation all became infected as in the first series. The same result occurred in those implanted six hours after operation, but in those implanted twelve hours after operation only 83 per cent became infected. Also these infections were not so severe. In a twenty-four hour group only 66 per cent became infected, implantation of organisms two days after operation yielded 56 per cent infections, those implanted three days after operation yielded 36 per cent infected wounds, none of which were severe. Implantation at four days gave 10 per cent infections and at five or more days after operation none became infected. The above facts should be considered in the care and dressing of wounds.

Learmonth, Montgomery and Counseller(7) have suggested the operation for neurectomy of the sensory nerves of the perineum for irritative lesions of the vulva. They reported the results of fourteen such operations. The immediate effect of operation is to banish the pruritus. The temporary results were excellent in most cases. However, only four of the cases were done long enough ago to be of value in determining the permanence of relief. This depends on the possibility of regeneration of the severed nerves. Therefore, the final results of this treatment cannot yet be stated. The authors felt that neurectomy may well be offered to patients suffering from irritative conditions of the vulva, except those of two types: When there is any suspicion of malignant change, vulvectomy is the only procedure to be considered, and when the patient is so fat that identification of the various nerves would be tedious and perhaps uncertain. vulvectomy provides the quickest solution of the problem.

Paralytic ileus may reflexly be caused by impulses ascending the sensory fiber to stimulate the motor pathway inhibitory to intestinal motility. The treatment of paralytic ileus by spinal anesthesia aims to break up the integrity of the reflex arc at the intercalated neuron. As soon as the communication between the sensory and motor fiber becomes disrupted, intestinal contractions resume under the influence of the vagus.

Theoretically, Winograd, Hirsch and Barnard(8) assumed that ephedrine would inhibit intestinal motility even during the course of spinal anaesthesia. This they confirmed by experiments on dogs. They concluded that the use of ephedrine as a pressor substance in spinal anaesthesia, where the latter is for the relief of paralytic ileus, is contra-indicated. After a spinal anaesthesia caused intestinal motility to return with a gradual fall in blood pressure, the administration of ephedrine caused a resumption of the original blood pressure level and an immediate cessation of intestinal motility.

Kilbourne(9) has carefully studied the question of the advisability of the injection of varicose veins during pregnancy. He has studied the question of results and dangers very thoroughly. The conclusion reached by this study was that in cases of serious pain or discomfort due to the dilated veins that they should be injected. He felt that injections might have some effect in preventing milk leg as clinically varicose veins do develop phlebitis with a frequency not seen in normal veins. However, phlegmasia albo dolens most often begins in the deep veins of the leg and later involves the superficial veins. General treatment of varicose veins of pregnancy as a prophylactic against phlebitis would not be advised. Also, in the majority of light cases it would be better to wait till after the delivery and see if the varicose veins will not regress spontaneously. However, he concluded that treatment was indicated in patients with serious distress during the fourth to seventh months of pregnancy.

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CANCER OF CERVIX UTERI

In the treatment of cancer of the cervix uteri, H. S. Crossen, St. Louis (*Journal A. M. A.*, Dec. 24, 1932), gives as large a dose of the hard rays of radium as the conditions permit without extending the soft-ray slough into the bladder or rectum, and then follows this at a selected time with high voltage roentgen therapy. All eleven patients whom he treated in this manner were living and without evidence of recurrence from five to nine years after treatment. In each case the diagnosis of carcinoma of the cervix was confirmed by microscopic examination of removed tissue. These were not early cases but advanced ones. Most of the patients had extensive parametrial involvement with fixation to the pelvic wall. The cases were practically hopeless from the operative standpoint, and yet with intensive radiation treatment the patients are living at the end of from five to ten years, and free from cancer.

SARCOMA OF THIGH

MAX EMMERT, M. D.,
Omaha, Nebraska.

Miss G. T., aged 24, was referred 7-14-17 because of a lump on the thigh.

F.H. No family history of neoplasms. Mother committed suicide.

P.H. Has undergone medical treatment for exophthalmic goitre for two years. Seven years ago there had been removed from the lateral surface of the left leg a tumor the size of a pigeon's egg, which had been present for six months and had never caused pain.

P.I. Both feet have been swollen since last spring. On July 4th last accidentally discovered a lump on the posterior surface of the right thigh. No history of injury. No pain until recently, following an osteopathic treatment.

Exam. Exophthamos—uniform enlargement of thyroid, P 120, systolic pressure 115, diastolic 95. Heart apparently normal. General examination reveals normal condition except for mass on right thigh which is located about the center of the posterior surface. It is the size of an orange, causing marked elevation of the skin which is not discolored and freely movable over the mass. The mass is very firm and fixed to the underlying tissue. At the lower border it is slightly nodular. No tenderness or enlargement of the regional lymph glands, no pelvic glands felt nor involvement of the genitalia.

After several days of rest and ice to the thyroid, the patient was operated 7-20-17. The mass posterior to the fascia lata and upon separating the biceps and semitendinosus muscles the mass was easily separated from the underlying tissue, the sciatic nerve was spread in a fan-shape at the side of the mass, which apparently had its origin in the sheath of the nerve. The tumor was oblong in shape, rather firm and slightly irregular in outline. The sheath was smooth and not especially vascular. Weight 9 ounces, length 13 cm., diameter 8½ cm., circumference—long diameter 30 cm., center diameter 21 cm. Capsule strips easily exposing a smooth glassy surface. Cut surface reveals a homogeneous, yellowish-white surface which bulges slightly with a few punctate hemorrhages. At the upper pole is a cavity containing about a drahm of serum and a recent blood clot. Some portions are not as firm as others. About the center of the mass is a sulcus ½ cm. deep into which the capsule extends.

PATHOLOGICAL DIAGNOSIS

Fibro-sarcoma of the giant cell type. Later diagnosis—simple fibroma with large connective tissue cells. Patient left the hospital on the twelfth day with slight induration along the scar. Six weeks after leaving the hospital, patient developed a skin infection (thought by the local physician to be streptococcus) which involved the entire leg and thigh. This lasted with elevated temperature for two weeks. One week later there developed on the median surface of the left ankle a tender inflamed mass which was thought locally to be the result of the infection. The inflammatory reaction subsided, leaving a firm mass. The patient was seen by me December 11th, and operated December 12th, removing a lobulated mass intimately associated with posterior tibial vessels and clinically more definitely malignant.

Sections were sent to Dr. J. C. Bloodgood of Baltimore, who made the following report: "The sections show in some areas typical myomatous tissue but other areas are cellular. This type of tumour always recurs if it is not completely removed or if it is removed by enucleation but when completely removed it rarely metastasizes. I would call it a fibromyxo-spindle and round cell sarcoma."

Patient seen 2-28-18, complaining of pain in right groin. Nothing felt. Hard mass upper part labia majora. Induration about ankle scar.

March 8th—referred for x-ray treatments, which were continued for two months. In July, 1918, she went to a cancer cure sanitorium in an adjacent state where the leg was amputated and she returned home in a coffin.

COMMENT

Sarcoma as a general term is the most malignant of the tumors which come under the general grouping of cancer. The closer to the embryonic type the sarcoma cell approaches, the greater is the malignancy. The most deceptive type is that group which in general appearance resembles the benign tumor with well defined capsule, low grade vascularity, etc., as exemplified by this recited case. It is well to remember that the gross arrangement of the fibuls of the simple fibroma is in whorls, whereas, in sarcoma the cut section reveals a more homogeneous arrangement. The borderline cases or those of low virulence are very difficult to differentiate even under the microscope. The return of the growth after excision is always prima fascia evidence of malignancy. In removal of supposed benign tissue it is safest to remove a layer of surrounding tissue with the tumor where practical.

ANNUAL MEETING LEGISLATIVE PROCEEDINGS

HOUSE OF DELEGATES
FIRST SESSION

Fontenelle Hotel, Omaha, May 23, 1933—12:30 P. M.

The House of Delegates was called to order by the President, Dr. A. E. Cook.

A motion was made that inasmuch as the minutes of the 1932 meeting had been published in the Journal that the reading of them be dispensed with and that they be approved and adopted as published in the Nebraska State Medical Journal. Seconded and carried.

Roll call by Secretary Adams showed forty-nine members present. Then followed the regular order of business.

A motion was made that Dr. W. N. Nelson be seated as delegate from Nuckolls County. Seconded and carried.

A motion was made that Dr. F. A. Burnham of Custer County be elected as President protem. Seconded and carried.

The report of the Council was called for. This report was read by secretary of the Council Overgaard. Tho motion contained in the minutes of the Council relating to the reduction of the subscription to the Journal of the American Medical Association from $7.00 to $5.00 was discussed.

A motion was made to strike out the part of the report asking for a reduction of the subscription to the Journal of the American Medical Association. Seconded and carried.

A motion was made that the House of Delegates adopt the minutes of the Council with the exception of the part that has been stricken out. Seconded and carried.

Dr. Overgaard made a motion that an amendment be made in the By-Laws as follows:

Chapter 12; Section 1 as follows: Change $8.00 per capita to $5.00 per capita to begin January 1, 1933.

Chapter 8; Section 9 as follows: Change to read "There shall be appropriated from the general funds of the Association beginning September 1, 1933, and each year thereafter, the sum of five hundred dollars to be known as the Student Loan Fund."

Dr. Fouts made a motion that the following changes be made in the Constitution:

Chapter 8; Section 1. "The standing committees shall be as follows: A Committee on Scientific Program, to be appointed by the president-elect. A committee on Public Policy and Legislation to be appointed by the president. A committee on Journal and Publication. A committee on Nominations. A Medico-Legal Advisory Committee, to be elected by the Council. A committee on Arrangements. A Campaign Committee. A Public Activities Committee. Also such other Committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

Chapter 10; Section 1. "Medico-Legal Advisory." The Medico-Legal Department of the Nebraska State Medical Association shall be under the supervision of a committee of three. This committee shall be known as the Medico-Legal Advisory Committee and shall consist of the secretary of the State Medical Association who shall act as secretary of the Committee, and two other members who shall be elected by the Council, according to Chapter 8, Section 1, of the By-Laws governing our Association, and serve for the term of two years, provided that in the original organization of the committee, one member shall be elected for a term of one year.

Sec. II. On and after their election, it shall be the duty of this committee to effect such organization as they may see fit and to adopt rules for their guidance and for the guidance of members of the State Medical Association in Medico-Legal matters, not set forth in the Constitution and By-Laws. It shall be their duty to investigate all claims of malpractice against members as herein set forth, to adjust such claims in accordance with equity where possible, and if claim is unjust or damage sought excessive, to lend such help as they may deem proper, but they shall not pay or obligate the Association to pay a judgment against a member or court costs of any suit.

Sec. III. The Medico-Legal Advisory Committee may elect a member of the Bar of Nebraska as a legal counsel of the Association, and is authorized to pay such counsel an annual retainer fee. The proper fees for defending members of the Association for alleged malpractice shall be paid out of the Medico-Legal Fund, provided that the member has placed his case in the hands of the Association in accordance with the regulations adopted by the Association.

Sec. IV. All debts contracted by medico-legal work shall be paid by the treasurer of the State Association from the Medico-Legal Fund on warrants drawn by the Committee against the treasurer of the Nebraska State Medical Association as provided by the Constitution and By-Laws.

Sec. V. The Medico-Legal Advisory Committee shall at each annual meeting of the State Association make to the House of Delegates a report of all expenses incurred and work done during the year next preceding the meeting.

Sec. VI. At the end of each year the sum of $1.00 for each member shall be set aside by the treasurer of the State Association as a special fund to be called the Medico-Legal Fund. This fund shall be kept separate from other moneys of the Association and shall be used only for the aid of such members as shall have contributed to said fund.

Sec. XII. Upon the receipt of notice by the secretary of the Nebraska State Medical Association, from a member of the Association, that suit has been commenced against him, the secretary of the Medico-Legal Advisory Committee shall forward to such member a blank form, which the defendant physician shall promptly fill out and return to said secretary.

These amendments were laid on the table for one day.

The report of the Program Committee was called for. Secretary Adams stated that inasmuch as both the Program Committee's and the Secretary's report had been published, he saw no necessity of reading them again. A motion was made that the report of the Program Committee and of the Secretary be accepted as printed in the Journal. Seconded and carried.

The report of the Committee on Public Policy and Legislation was called for. This report was read by Dr. B. F. Bailey. Motion was made that this report be received and referred to the Council. Seconded and carried.

Dr. Overgaard moved that a standing vote of thanks be extended to the Committee on Public Policy and Legislation for the work they have done this year. Seconded and carried.

The report of the Committee on Journal and Publication was called for. Dr. Long stated that he had no further addition to make to the report which was given in January and asked that this report be accepted. A motion was made that the report of the Journal Committee be accepted as given before the Council in January. Seconded and carried.

The report of the Campaign Committee was called for. The report of the Campaign Committee was read by Dr. Hohlen. A motion was made that this report be accepted, referred to the Council and that a standing vote of thanks be given Dr. Hohlen for his work on this Committee. Seconded and carried.

The report of the Delegate to the American Medical Association was called for. Dr. Fouts stated that he had nothing further to add to the report given last year.

The report of the Insurance Committee was called for. This report was given orally by Dr. Selby. A motion was made that this report be accepted, and that the Committee be asked to continue. Seconded and carried.

The report of the Council on Medical Education was called for. As Dr. Welch was not present this report was read by Secretary Adams. A motion was made that this report be received and referred to the Council. Seconded and carried.

The report of the Medical Legal Defense Committee was called for. Dr. Fouts made an oral report on this Committee.

Dr. Overgaard read the Necrology report. The members remained standing during the reading. A motion was made that pages be set aside in the Journal in Memoriam to Past President Lawrence M. Shaw and Past President Byron B. Davis. Also that a page be set aside in Memoriam to other members who have passed away in the last year. Seconded and carried.

A request was made by the Platte County Medical Society that Dr. C. D. Evans, Sr., of Columbus be made an Honorary member of the Nebraska State Medical Association. A motion was made that this be referred to the Council. Seconded and carried.

A motion was made that Merrick County be transferred from the Fifth Councilor District to the Ninth Councilor District.

An amendment to this motion was made by Dr. Selby that Dawson County be transferred from the Ninth Councilor District to the Eleventh Councilor District.

A recommendation was made that the Council be asked to consider the re-districting of the Counties in Nebraska and bring this report to the next meeting of the House of Delegates. Seconded and carried.

Nominations for the members of the nominating committee were called for, each Councilor to name a member from each Councilor District. The following nominations were made:

1st District—Dr. Ernest Kelly.
2nd District—Dr. Geo. Covey.
3rd District—Dr. G. W. Egermayer.
4th District—Dr. E. L. Brush.
5th District—Dr. Morris Nielsen.
6th District—Dr. Mason Lathrop.
7th District—Dr. Rudolph Decker.
8th District—Dr. W. J. Douglas.
9th District—Dr. W. D. McGrath.
10th District—Dr. G. E. Charlton.
11th District—Dr. O. R. Platt.
12th District—Dr. G. W. Pugsley.

A motion was made that inasmuch as Dr. Mitchell is seriously ill and a prominent member of the Nebraska State Medical Association that the House of Delegates send the family a note of condolence and proper floral offering. Seconded and carried.

A motion was made that the meeting adjourn. Seconded and carried.

COUNCILOR MEETING
FIRST SESSION

Fontenelle Hotel, Omaha, May 23, 1933—4:00 P. M.

The meeting was called to order by president of the Council, Bryson. Those present were: Drs. Overgaard, Lehnhoff, Boyer, Cook, Bryson, Rork, Selby, Davis, King, Potter, ex-president Lucien Stark. Dr. R. B. Adams, secretary-treasurer, and Dr. Adolph Sachs, president-elect, were also present.

A motion was made that Dr. C. D. Evans, Sr., of Columbus, on application of the Platte County Medical Society, be recommended favorably to the House of Delegates for Honorary membership in the State Medical Association. This motion was unanimously seconded and carried.

A motion was made that Dr. Bailey's report on the Legislative Committee be received and placed on file. Seconded and carried.

A motion was made that Dr. Hohlen's report on the Campaign Committee be received and placed on file. Seconded and carried.

A motion was made that the report of the Insurance Committee as given by Dr. Selby be received and placed on file, and that the Committee be continued. Seconded and carried.

A motion was made that the Council accept the report of the Committee on Medical Education and Hospitals as given by Dr. Welch and that the Council thank the members of that Committee for their favorable work and convey to them that the Council appreciates their efforts and hopes that they continue in those efforts in order that we may at some future time arrive at the goal which they hope to accomplish. Seconded and carried.

The matter of changing counties into different districts was discussed.

A motion was made that inasmuch as no requests have come from the counties involved that no action be taken at this time but that a redistricting may take place at a later date. Seconded and carried.

A motion was made that the Council adjourn. Seconded and carried.

HOUSE OF DELEGATES
SECOND SESSION

Fontenelle Hotel, Omaha, May 24, 1933—8:00 A. M.

The meeting was called to order by Dr. F. A. Burnham, president-protem. Roll call by secretary Adams showed forty-six members present.

The minutes of the first session were read by secretary Adams. A motion was made that the minutes be adopted as read. Seconded and carried.

The minutes of the Councilor meeting were read by Dr. Overgaard, secretary of the Council. A motion was made that the minutes of the Council be adopted as read. Seconded and carried.

A motion was made that the House of Delegates adopt the amendemcnt proposed by Dr. Overgaard to read as follows: Chapter 12; Section 1: Change $8.00 per capita to $5.00 per capita to begin January 1, 1933. Seconded and carried.

The amendment Chapter 8: Section 9: Change to read "There shall be appropriated from the general fund of the Association beginning September 1, 1933, and each year thereafter, the sum of five hundred dollars to be known as the Student Loan Fund" was discussed. Dr. Long made a motion that this amendment be adopted. Seconded by Dr. Davis. Dr. Bailey made a motion that this amendment be amended to read "There shall be appropriated from the general funds of the Association if available beginning September 1, 1933, and each year thereafter, the sum of five hundred dollars to be known as the Student Loan Fund." This motion was seconded and carried as amended.

Dr. McGrath discussed the changing of Merrick County to the ninth Councilor District and Dawson County to the eleventh Councilor District.

A motion was made that an amendment be made to the original motion to read: "That this question be laid over until such a time when the Council will have redistricted the state." Seconded and carried.

A motion was made that a committee be appointed by the Council to redistrict the state during this year and a report of this committee be submitted at the first session of the House of Delegates next year. Seconded and carried.

A motion was made that the above motion be amended to include the men who are involved in that part of the state. Seconded and carried.

A motion was made by Dr. Stark that this committee which is to be appointed to redistrict the state shall have as its members one man from each Councilor district as they now stand. Seconded and lost.

A motion was made by Dr. Hohlen that the president of the State Society shall appoint the committee to redistrict the state putting on one member from each Councilor district. Seconded and lost.

Dr. Rowe gave his report on the Costs of Medical Care. A motion was made that this report be referred to the Council and that this report be published in both of the Omaha papers. Seconded and carried.

A motion was made that a standing vote of thanks be extended to the committee on the Costs of Medical Care. Seconded and carried.

A motion was made that the meeting adjourn. Seconded and carried.

COUNCILOR MEETING
SECOND SESSION

Fontenelle Hotel, May 24, 1933—9 A. M.

The meeting was called to order by president of the Council Bryson. Those present were: Drs. Overgaard, Lehnhoff, Boyer, Bryson, Rork, Selby, Cooper, Cook, Davis, Potter, and Sachs. Drs. Stark and Adams were also present.

A recommendation was made that the report of Dr. Rowe on the Costs of Medical Care be published in the Omaha papers and also in the Journal of the

Nebraska State Medical Association. Also that the Council appreciatees very greatly the work of the committee and wishes the committee to be continued. Seconded and carried.

The following budget was recommended by the Council for the year 1934:

Journal Fund, per member	$ 1.50
Medical Legal Fund, per member	2.00
Salary Chairman Medical Legal Committee	600.00
Salary of Secretary	600.00
Councilor Expense	360.00
Office Expense of Secretary	800.00
Reporter for Meeting	150.00
Campaign Committee	500.00
President's Expense	100.00
Legislative Committee	100.00
Program Talent	500.00
Delegates to A. M. A. and Council on Medical Education as Submitted	
Medical Student Loan Fund	500.00

A motion was made that this budget as read be recommended to the House of Delegates for the year 1934. Seconded and carried.

A motion was made that Dr. C. A. Hull of Omaha be re-elected as a member of the Medical Legal Advisory Committee. Seconded and carried.

A motion was made that Dr. R. B. Adams of Lincoln be re-elected as secretary-treasurer of the State Medical Association for the next three years. Seconded and carried.

A motion was made that the January meeting of the Council be held in Lincoln at 2:00 p. m. Seconded and lost.

A motion was made that the January meeting of the Council be held in Omaha at 2:00 p. m. Seconded and carried.

A motion was made that the re-districting committee be limited to three members. Seconded and carried.

A motion was made that this motion be amended as follows: That this committee shall also include the president of the State Association and the secretary of the Council. Seconded and carried.

A motion was made that the following men be appointed to serve as a re-districting committee: Dr. Morris Nielsen of Blair, Dr. F. A. Burnham of Arnold and Dr. O. R. Platte of North Platte. Seconded and carried.

Dr. Lehnhoff made the following motion regarding the Public Activities Committee:

After a thorough discussion of the past efforts and accomplishments of the Public Activities Committee, the following motion was made. It was moved and seconded that each and every member of the Council recognizes the length of time its Committee has served; recognizes its energy and efforts expended by the members of the committee and particularly its chairman; recognizes what the committee has accomplished in attaining the goal for which it was created; recognizes that the accomplishments of the committee have in contrast to most working units of the association, gained an interested reputation; and recognized that fact that the efforts of the chairman of the committee have received public confirmation of approval by the Nebraska State Medical Association. On the other hand the Council deplores the fact that, as in practically all organizations, a financial emergency existed. It became obligatory to contract the budget. For this reason the Public Activities Committee could not be given the usual financial support. It is the ardent hope of the Council that in the near future, economic conditions will again permit the budgeting of sufficient funds to enable the committee to carry on its plans and objectives. Seconded and carried.

A motion was made that the Council adjourn. Seconded and carried.

HOUSE OF DELEGATES
THIRD SESSION

Fontenelle Hotel, Omaha, May 25, 1933—8:00 A. M.

The meeting was called to order by president pro-tem Dr. F. A. Burnham. Roll call by Secretary Adams showed forty-eight members present.

The minutes of the second session of the House of Delegates were read by Secretary Adams. A motion was made that the minutes be approved as read. Seconded and carried.

The minutes of the second session of the Council were read by secretary of the Council Overgaard. A motion was made that the minutes be adopted. Seconded and carried.

The report of the nominating committee was called for. This report was read by Dr. Morris Nielsen as follows:

For President-elect: Dr. Joseph Bixby, Geneva; Dr. J. J. Hompes, Lincoln.

For Vice Presidents: Dr. G. L. Pinney, Hastings; Dr. Wm. Shepherd, Rulo.

For Councilors: Dr. A. P. Overgaard, Omaha, 1st District; Dr. H. J. Lehnhoff, Lincoln, 2nd District; Dr. W. R. Boyer, Pawnee, 3rd District; Dr. E. L. Brush, Norfolk, 4th District.

For Delegate to the A. M. A.: Dr. B. F. Bailey, Lincoln.

For Alternate Delegate to the A. M. A.: Dr. Geo. Covey, Lincoln.

For Member of the Public Activities Committee: Dr. C. W. M. Poynter, Omaha.

For Delegate to the Council on Medical Education of the A. M. A.: Dr. J. Stanley Welch, Lincoln.

For Member of the Journal and Publication Committee: Dr. F. A. Long, Madison.

For Member of the Student Loan Fund Committee: Dr. A. P. Overgaard, Omaha.

Respectfully submitted,
Dr. Morris Nielsen, Chairman,
Dr. Ernest Kelley, Secretary.

A motion was made that the report of the nominating committee be accepted. Seconded and carried.

The House then proceeded to the election of officers.

Drs. Lucien Stark and Mason Lathrop were appointed as tellers.

Additional nominations for president-elect were in order. As no additional names were submitted by the House nominations for president-elect were closed. The House of Delegates then proceeded to cast ballot for the two nominees for president-elect.

Dr. Joseph Bixby, Geneva, received 27 votes and Dr. J. J. Hompes, Lincoln, received 21 votes.

A motion was made that inasmuch as Dr. Bixby had received the majority of votes cast for president-elect that his election be made unanimous. Seconded and carried.

Dr. Burnham appointed Dr. H. E. Potter and Dr. V. V. Smrha as a committee to bring Dr. Bixby, president-elect before the House of Delegates.

Dr. Stark made the motion that inasmuch as there was only one candidate for each office that the rules be suspended and the secretary be asked to cast the unanimous ballot of the House of Delegates for the men named by the nominating committee for offices in the Nebraska State Medical Association. Seconded and carried.

A motion was made that the Nebraska State Medical Association request the American Society for the Control of Cancer to make a survey of the state of Nebraska as they have requested. Seconded and carried.

Dr. Joseph Bixby was at this time brought in the room and introduced to the House of Delegates by President Sachs. Dr. Bixby gave a short talk in appreciation of the honor given him.

A resolution adopted by the Medical Association of

Georgia and submitted to the Nebraska State Medical Association was read by Dr. Adams as follows:

Whereas, the medical profession of the United States is suffering losses all out of proportion to its ability to endure, and

Whereas, our losses are not so much due to the financial depression as to over-production of doctors and decreased demand for paid medical service generally, and

Whereas, the production of doctors is far in excess of the population increase,

Therefore, we the members of the Nebraska State Medical Association request the medical colleges of the United States to reduce the number of graduates each year until the law of supply and demand has been fully complied with. The number of graduates to be determined by a national committee appointed by the President of the American Medical Association, and that a copy of these resolutions be sent to the medical associations of other states and to the house of delegates of the American Medical Association for their consideration at the next annual session.

Respectfully submitted.

A motion was made by Dr. Long that this resolution be referred to the Delegates to the American Medical Association without recommendation. Seconded and carried.

Dr. Burnham appointed Dr. B. F. Bailey, Lincoln; Dr. H. E. Potter, Fairbury and Dr. F. A. Long, Madison, as a committee of three to present Dr. Joseph Bixby, president-elect, at the general sessions.

The selection for the place of the next meeting was then in order.

A motion was made that the 1934 meeting be held in Lincoln. Seconded and carried.

A motion was made that the House of Delegates extend to the Omaha-Douglas County Medical Society and Dr. M. C. Howard, as chairman of the program committee, a vote of sincere thanks for their splendid entertainment and also a vote of thanks be extended to the Fontenelle Hotel for their courteous treatment of the Nebraska State Medical Association. Seconded and carried.

A motion was made to adjourn. Seconded and carried.

ANNUAL REPORT OF THE STUDENT LOAN FUND

This is the end of the second year of our activity, and we beg to report that two new loans were made during the year, and have two students now waiting for their second installment. These men were juniors last year and have completed their year's work and are now in their senior year in each of our medical colleges. Have a young man applicant who will be a junior next fall, whose father was a physician in good standing with our association when he died four years ago. We certainly should make every effort to help this young man through his medical course. Our five loans all show that the interest has been paid to date.

Seventy-five dollars was received last month from the Madison Six County Medical Society Auxiliary, to add to our fund for worthy medical students. This was given to honor Mrs. F. A. Long of Madison.

Attached is our financial statement for 1932.

Signed, F. A. Long,
H. J. Lehnhoff,
A. P. Overgaard.

STUDENT LOAN FUND REPORT

Resources

January 4, 1932, Received from Secretray R. B. Adams	$500.00
March 24, 1932, Interest on Loan No. 1	3.00
March 29, 1932, Interest on Loan No. 2	6.00
April 11, 1932, Interest on Loan No. 3	6.00
June 10, 1932, Interest on Loan No. 4	6.00
August 8, 1932, Interest on Loan No. 5	6.00
October 7, 1932, Interest on Loan No. 2	6.00
November 19, 1932, Interest on Loan No. 3	6.00
December 1, 1932, Interest on Loan No. 1	3.00
December 6, 1932, Contribution from Auxiliary of Madison Six Counties Medical Society, in honor of Mrs. F. A. Long	75.00
Total	$617.00

Disbursements

January 1, 1932, Overdrawn from 1931	$ 1.15
January 20, 1932, Loan No. 4	200.00
January 21, 1932, Loan No. 5	200.00
February 6, 1932, Omaha Printing Co., Files	3.60
October 1, 1932, Loan No. 2	100.00
November 23, 1932, Loan No. 4	20.00
January 1, 1933, Cash on Hand	92.25
Total	$617.00

We have examined the above report of the Student Loan Fund Committee of the Nebraska State Medical Association and believe the same to be true and correct.

Signed,
L. W. Rork,
A. L. Cooper,
Homer Davis.

REPORT OF COMMITTEE ON COSTS OF MEDICAL CARE

This is neither the time nor place for a lengthy discussion on The Report of the National Committee on Costs of Medical Care. The medical profession generally as well as the laity are well informed on both the majority and minority reports. Any real discussion of the subject takes one into the realm of medical economics, where it is easy to lose bearings in the vastness of the illimitable field. Suffice it to say that our rural membership appears interested to an academic degree. The urban members are more vitally concerned and have organized standing committees to review the present social trends and to make recommendations to their societies.

It is well known that in general, organized medicine is more favorable to the first minority report. This does not mean that the facts secured by the committee are ignored. But it means that physicians who are in the actual practice of delivering medical service are not ready to adopt mass medicine as the method of administration of the medical care to the sick. Nor are they ready to turn over to lay organizations the management or to permit exploitation of the medical profession. The future of medicine is not easy to forecast. It can progress slowly. If progress is to be certain there should be no leaping to untried methods. We are passing through a period of social revolution and it seems certain now that failure has come to big business, paternalism in government, superorganization and mass action of all kinds. We seem to be going back to older and more tried methods of personal responsibility and cooperation.

Your committee feels that this is not a time for radical action nor adoption of new and untried plans by the Society. The problems should receive further study.

The Lancaster County Medical Society has a committee of ten on Medical Economics, which is making a survey of the various reports on medical investigations, and serving the Society as a committee to pass on recommendations to the Society. Douglas County Society also has a committee on Medical Economics for the same purpose.

Your Committee makes the following recommendations:

1. That county societies be urged to appoint a standing committee on Medical Economics to study,

evaluate and coordinate medical service in each local community.

2. That all members of the Nebraska State Association be warned against signing any contracts with lay organizations who are promoting schemes of medical care.

3. That further participation of laymen in the practice of medicine be discouraged, as uneconomical and unnecessary, that the medical profession is well able to determine and direct its own affairs.

4. That The United State Public Health Service be continued in an advisory capacity, to promote state and local health agencies, rather than to provide medical care.

5. That state or local community shall continue to provide for the expense of the medical care of the indigent and the mentally incompetent.

6. That improvement in basic medical education be urged by all medical schools and licensing boards to prepare the medical student for general practice to give scientific medical care.

7. That cooperation in private and hospital practice be urged as a further advantage, meeting the modern trend in specialized practice, and destroying the dangers of competition.

8. That the continuation of personal relationship between physician and patient be assiduously developed so that their problems may be better adjusted, and the dangers of inroads by irregulars and lay health organizations be discouraged.

9. That the present system of private individual practice be upheld as adequate when adjusted to the changing economic trends.

ROLL CALL—HOUSE OF DELEGATES

Adams—G. E. Charlton	p	a	p
A. J. Boren	a	a	a
Boone—	a	a	a
....	a	a	a
Box Butte—	a	a	a
....	a	a	a
Buffalo—L. M. Stearns	a	a	a
L. T. Sidwell	a	a	a
Burt—W. C. Keettel	p	p	a
I. Lukens	a	a	a
Butler—C. E. Beede	a	a	a
J. H. Downing	a	a	a
Cass—O. E. Liston	p	p	a
L. D. Lee	a	a	a
Cedar-Dixon-Dakota-Wayne-Thurston— John Buis	p	p	p
....	a	a	a
Chase—C. R. Carlson	a	a	a
....	a	a	a
Dundy—J. F. Premer	a	a	a
....	a	a	a
Hayes—D. L. Morse	a	a	a
....	a	a	a
Hitchcock—L. B. Brown	a	a	a
....	a	a	a
Furnas—C. E. Minnick	a	a	a
....	a	a	a
Frontier—B. I. Mills	a	a	a
....	a	a	a
Red Willow—W. D. Mackechnie	p	p	a
....	a	a	a
Cheyenne-Kimball—R. A. Roche	a	a	a
A. R. Everett	a	a	a
Clay—H. V. Nuss	a	a	a
C. F. Nutzman	a	a	a
Colfax—S. B. Koory	p	p	a
W. F. Novak	a	a	a
Custer—F. A. Burnham	p	p	p
....	a	a	a
Dawson—A. E. Reeves	a	a	a
....	a	a	a
Dodge—A. E. Buchanan	p	a	p
....	a	a	a
Fillmore—V. V. Smrha	a	a	p
W. S. Musfelt	a	a	a
Franklin—Hal C. Smith	p	p	p
Dennis Neville	a	a	a
Gage—J. C. Waddell, first session	p	a	a
F. W. Buckley	a	a	p
W. A. Rush	a	a	a
Hall—W. D. McGrath	p	p	p
W. W. Arrasmith	a	a	a
Hamilton—J. M. Woodard	a	a	p
....	a	a	a
Harlan—W. C. Bartlett	a	a	a
J. N. Campbell	a	a	a
Holt and Northwest—O. W. French	a	p	p
....	a	a	a
Howard—F. J. Condon	p	p	a
A. H. Holm	a	a	a
Jefferson—G. M. Lynch	p	p	a
....	a	a	a
Johnson—Jos. Lanspa	a	a	a
A. P. Fitzsimmons	a	a	a
Lancaster—Geo. W. Covey	p	a	p
J. J. Hompes	a	a	a
Harry E. Flansburg	p	p	p
A. D. Munger	a	a	a
J. E. M. Thomsen	p	a	p
Lincoln—Otis R. Platt	a	a	p
Chas. F. Heider	a	a	a
Madison—E. L. Brush	p	p	a
....	a	a	a
Stanton—R. A. Frary	p	p	p
....	a	a	a
Pierce—John Calvert	p	p	p
....	a	a	a
Antelope—E. E. Curtis	a	a	a
....	a	a	a
Knox—W. E. Wright	p	p	p
....	a	a	a
Cuming—H. W. Francis	p	p	p
....	a	a	a
Merrick—	a	a	a
....	a	a	a
Nance—J. A. Cleary	p	p	p
....	a	a	a
Nemaha—	a	a	a
....	a	a	a
Northwest-Nebraska—	a	a	a
....	a	a	a
Nuckolls—W. N. Nelson	p	p	p
....	a	a	a
Omaha-Douglas—J. F. Langdon	a	p	a
Rudolph Rix	a	a	a
Chas. F. Moon	a	p	a
Frank Murphy	a	a	a
E. L. MacQuiddy	a	p	p
Herbert H. Davis	a	a	a
Earl Connolly	p	a	a
J. J. Freymann	a	a	a
Ernest Kelley	p	a	p
Herman Johnson	a	a	a
R. W. Fouts	p	p	p
E. E. McMahon	a	a	a
Otoe—J. P. Gilligan	p	a	a
....	a	a	a
Pawnee—A. B. Anderson, Jr.	a	a	a
J. F. Prendergast	a	a	a
Phelps—P. A. Sundbury	a	a	a
....	a	a	a
Platte—E. E. Koebbe	p	p	a
F. H. Morrow	a	a	a
Polk—J. B. Williams	a	a	a
....	a	a	a
Richardson—G. W. Egermayer	p	p	a
Wm. Shepherd	a	a	a
Saline—A. A. Conrad	a	a	a

Frank T. Hamilton	a	a	a
Saunders—Mason Lathrop	p	a	p
	a	a	a
Scotts Bluff—G. W. Pugsley	p	p	p
	a	a	a
Seward—J. E. Meisenbach	p	a	p
H. J. Wertman	a	a	a
Thayer—Rudolph F. Decker	p	p	p
H. W. Saylor	a	a	a
Valley—	a	a	a
	a	a	a
Washington—Raymond Burr	a	a	a
	a	a	a
Webster—E. V. Lewis	a	a	a
E. A. Creighton	a	a	a
York—Robert E. Harry	a	a	a
J. S. Bell	a	a	a

COUNCILORS

A. P. Overgaard	p	p	p
H. J. Lehnhoff	a	p	p
W. R. Boyer	p	p	p
A. E. Cook	p	p	p
R. D. Bryson	p	p	p
L. W. Rork	p	p	p
C. A. Selby	p	p	p
A. L. Cooper	a	p	p
Homer Davis	p	p	p
D. D. King	p	p	p
H. E. Potter	p	p	p
W. J. Douglas	a	a	a
President—1st meeting—A. E. Cook	p		
President-elect—1st meeting—Adolph Sachs	a		
President—Adolph Sachs		p	p
Vice Presidents—Homer Davis	p	p	p
E. B. Hamel	a	a	a
Secretary-Treasurer—R. B. Adams	p	p	p

EX-PRESIDENTS

J. E. Summers	a	a	a
W. O. Bridges	a	a	a
A. R. Mitchell	a	a	a
F. A. Long	p	p	p
P. H. Salter	a	a	p
J. P. Lord	a	a	a
I. N. Pickett	a	a	a
E. W. Rowe	a	p	a
W. F. Milroy	a	a	a
C. L. Mullins	a	a	a
H. W. Orr	a	a	a
M. S. Moore	a	a	a
B. F. Bailey	p	p	p
Morris Nielsen	a	p	p
Palmer Findley	a	a	p
H. J. Lehnhoff	a	p	p
H. E. Potter	p	p	p
B. R. McGrath	p	p	a
F. S. Owen	a	a	a
K. S. J. Hohen	p	p	p
Lucien Stark	p	p	p
A. E. Cook—After 1st meeting		p	p

INTRODUCTION OF PRESIDENT DR. ADOLPH SACHS. BEFORE THE GENERAL SESSION, TUESDAY, AFTERNOON, MAY 23

Dr. A. E. COOK, President:

It affords me a great deal of pleasure to introduce to you a man who really needs no introduction to the Nebraska State Medical Association. I presume he is as well or better known than any man in the Association. He has been teaching for twenty-three years, and for ten years has occupied the chair of Medicine at Creighton University College of Medicine.

I take a great deal of pleasure in presenting to you your new president, Dr. Adolph Sachs, of Omaha.

DR. ADOLPH SACHS, Responding:

Members of the Nebraska State Medical Association and guests: I wish to take this opportunity again of thanking the men who have been so generous to me in giving me the privilege of holding this high office representing this organization. I wish to compliment Dr. Cook, the outgoing president, and his committees for the wonderful work they have done and the excellent results achieved the past year. It is going to be rather hard for us to live up to the model they have set for us. They have done more work than you appreciate. It is a stormy time, and they have kept the waters smooth. I feel they deserve a vote of thanks from this society for the things they have accomplished. It has been a privilge to have a man such as Dr. Cook at the head of this organization.

As to the program for this year, as you know, we have quite a lot of work to do. This is no time for a lot of idle words. I would rather wait until the end of the year and see if we can fulfill the bill. I am here to work with you, and help in any way possible. If every one works with me, I am sure a lot of the problems presenting themselves that seem so large will probably solve themselves.

It is not my purpose to give an address this afternoon, because I will deliver one this evening.

I want again to thank you, and say to the different councillor districts I hope to have the pleasure of attending some of your meetings. If there is any place anyone feels I can be of assistance in work pertaining to the state organization, my time is yours. We will put in the work, and all we ask of you is co-operation.

This year I hope to try to scrape off some rough edges, because we need closer co-operation. Let's put our shoulders to the wheel and forget our personal likes and dislikes. There is no individual who can stand alone. If we work together, we can hit the ball.

We have an excellent program this afternoon. I will ask you to come on schedule time and we will see there is no lag in the program.

I thank you.

In Memoriam

Ne'er was the sky so deep a hue
But that the sun came breaking through;
There never was a night so dark
But wakened to the singing lark;
Nor was there ever a lane so long
It had no turn for the weary throng;
Nor heart so sad that sometime after
There came no sound of lilting laughter:
And Death's not the end—'neath the cold black sod—
'Tis the Inn by the Road on our way to God.

—C. E. Warner.

Wm. W. Sadler, April 17th, 1932
Joseph E. Spatz, May 7th, 1932
Jerry E. Brainard, May 15th, 1932
Wm. F. Mitchell, June 3rd, 1932
Joseph V. Hinchman, June 17th, 1932
Hermann von Weichlinger Schulte, July 13th, 1932
Walter U. Ramey, August 11th, 1932
Douglas E. Hansen, August 12th, 1932
Thomas J. Vanderhoff, September 1st, 1932
Henry C. Walker, September 8th, 1932
James R. Kalar, September 18th, 1932
Morris H. Evans, September 19th, 1932
Andrew J. Jenison, October 6th, 1932
Wm. Nathaniel Hylton, November 3rd, 1932
John C. Malster, November 7th, 1932
Joseph Cerny, December 27th, 1932
Jacob F. Brendel, December 31st, 1932
Albert C. Armitage, January 3rd, 1933
D. D. Davis, January 23rd, 1933
Abraham Romm, February 4th, 1933
Wm. H. Nelsen, February 25th, 1933
Thomas H. Line, February 26th, 1933
Robert P. Hoxey, March 23rd, 1933
Geo. W. Fegers, April 1st, 1933
Arthur P. Ginn, April 4th, 1933
Emmett L. Robinson, April 10th. 1933
Edward Chaloupka, May 2, 1933
David T. Martyn, Sr., April 28, 1933

In Memoriam

One who never turned his back but marched
breast forward,
Never doubted clouds would break,
Never dreamed, though right were worsted,
wrong would triumph,
Held we fall to rise, are baffled to fight better,
Sleep to wake.
—Browning.

* * *

Lawrence M. Shaw

President of the Nebraska State Medical Association,
1908 - 09

Died August 15th, 1932

In Memoriam

I know the night is near at hand;
    The mists lie low on hill and bay,
The autumn sheaves are dewless, dry;
    But I have had the day.

Yes, I have had, dear Lord, the day;
    When at Thy call I have the night,
Brief be the twilight as I pass
    From light to dark, from dark to light.
—S. Weir Mitchell.

* * *

Byron B. Davis

President of the Nebraska State Medical Association,
1922

Died April 19th, 1933

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THE ANNUAL MEETING IN OMAHA IN MAY

An old time saying was "All signs fail in Nebraska." It is still true as applied to the Nebraska State Medical Association and its annual meeting. Economic stress, it was thought a while ago might well nigh ruin the association, but instead it proved the physicians' faith in medical organization, for the paid up membership is 1,026, which is but 55 short of the total membership in 1932. The registered attendance at the sessions was 385 which is not a bad average compared with other years. The program held the attention of the audience rather better than is usual. There was not one poor paper. It would be hard to single out one paper for special comment owing to the excellence of all. The guest speakers proved, for some reason more interesting, than usual. Discussion was lively. Only one essayist was absent and his place was taken by a volunteer. Two guest speakers the last afternoon, when members usually leave early for their respective homes, held the attendance well above the average for any day.

The guest speakers and their subjects follow:

"The Importance of the Irritable Colon in Everyday Practice"—Dr. H. L. Bockus, Philadelphia, Pennsylvania.

"Congenital Syphilis—a Preventable Disease"—Dr. Walter Clarke, New York City, New York.

"Transurethral Prostatic Resection" — Dr. N. G. Alcock, Iowa City, Iowa.

"Management of Hepatic Disease"—Dr. Chas. A. Elliott, Northwestern Medical School, Chicago, Ill.

"Complications of Pulmonary Tuberculosis"—Dr. L. A. Conway, Colorado Springs, Colo.

"Amputation of the Breast by the Electric Cautery"—Dr. James F. Percy, Los Angeles.

The president's address by Dr. Adolph Sachs given at the banquet, attended by over 400 guests, was enthusiastically received. He plead for a unified profession, less jealousy, more complete cooperation, declared himself against socialized medicine, for if independence and ambition is removed from the profession progress is hindered.

The entertainment for the evening consisted in "Carnivale Abroad" put on by Italians, Czechs, Serbs, Poles, Rumanians, Russians, Croatians in succession, all in costume, and consisted of music and folk dances. It was a beautiful thing to see and charming to the ear.

The local entertainment committee deserves special praise for their complete grasp of every situation and for their systemized work which made everything go smoothly and made the work of the secretary much easier than is usual at annual meetings.

THE HOUSE OF DELEGATES

Important matters came up in the house of delegates and that body functioned well—even the attendance in the house was well above the average of recent years.

By amending the by-laws the medico-legal defence committee was renamed medico-legal advisory committee.

A committee was provided to report on redistricting the councilor districts at the next annual meeting.

The By-Laws were amended to reduce the annual dues to $5.00 beginning January 1, 1933.

The committee on the Costs of Medical Care brought in a stirring report which met with unanimous approval as follows:

"1. That county societies be urged to appoint a standing committee on medical economics to study, evaluate and co-ordinate medical service in each local community.

"2. That all members of the Nebraska State Medical Association be warned against signing any contracts with lay organizations who are promoting schemes of medical care.

"3. That further participation of laymen in the practice of medicine be discouraged, as uneconomical and unnecessary, that the medical profession is well able to determine and direct its own affairs.

"4. That the United States public health service be continued in an advisory capacity, to promote state and local health agencies, rather than to provide medical care.

"5. That state or local community shall continue to provide for the expense of the medical care of the indigent and the mentally incompetent.

"6. That improvement in basic medical education be urged by all medical schools and licensing boards to prepare the medical student for general practice to give scientific medical care.

"7. That co-operation in private and hospital practice be urged as a further advantage, meeting the modern trend in specialized practice, and destroying the dangers of competition.

"8. That the continuation of personal relationship between physician and patient be assiduously developed so that their problems may be better adjusted, and the dangers of inroads by irregulars and lay health organizations be discouraged.

"9. That the present system of private individual practice be upheld as adequate when adjusted to the changing economic trends."

The election resulted in the election of Dr. Joseph Bixby, Geneva, preseident-elect.

PRACTICAL INFANT FEEDING

Much has been written and many talks have been given before both lay and medical organizations regarding the nutrition of the infant and its feeding. The average medical man still regards infant feeding as a problem instead of the rather simple, practical procedure, which it has become.

It is difficult for a doctor to grasp the newer modern ways of feeding infants when he compares them with the older so-called scientific percentage method of Rotch, the peptonized milk, the whey mixtures, and the more recent lactic acid milk.

Manufacturuers of food products, quick to grasp our lack of scientific knowledge of foods, have unfortunately not helped to clarify the situation by detailing the doctor and advising him to give so many small scoopfuls of this or that special food, and leaving on his desk small cards or whirligigs so that without further study he can feed all babies by rule of thumb.

If we would properly grasp the few principles which underly our modern efforts to successfully feed and properly nourish babies and children, we must think of the normal child and not of the diseased state. Our early training in this respect has been inadequate.

For a great many years it was taught that no baby could be successfully fed without breast milk. It is true that breast milk is the ideal food for an infant, but the baby can be adequately fed and his nutrition remain normal without breast milk. Attention to detail and a practical working knowledge of infant nutrition and growth is necessary. When breast milk is not available in adequate amount, cow's milk in some form with proper modification, is easily available. The usual procedure and the one most often successful is to make a simple dilution of cow's milk with water, adding sugar in one of many forms. boiling the whole mixture, thus making it bacteriologically safe and more easily digested.

Over twenty years ago Dr. Charles G. Kerly, a prominent pediatrician of New York City, advocated the feeding of infants with unsweetened evaporated milk. More recently evaporated milk has been rather widely popularized. When one realizes that evaporated milk is merely cow's milk evaporated down so that its caloric content is double that of cow's milk, its content of protein, sugar, and fat is twice that of cow's milk, and that it is bacteriologically safe, it is borne upon us that it has distinct advantages in safety, cheapness, and availability. The chief reason why evaporated milk has not been used more frequently is because of its association in our minds with the once popular sweetened condensed milk.

The early feeding of orange juice or tomato juice, cooked vegetables, yolk of egg, cereals, and the administration of cod liver oil, make up the so-called mixed diet, and supply the proper vitamins in a practical way.

The average physician can readily increase his usefulness in a community by giving a little study and thought to the nutrition of the infant, by attention to the details of infant feeding, and purchasing a pair of scales as part of his office equipment.

—Floyd S. Clarke, Omaha, Nebr.

"NOTES ON VITAMINES AND DIETS"

Under the above title Dr. D. T. Quigley, Omaha, has published a booklet of 124 pages in language easily grasped by the lay reader and yet intended. it seems to us for medical as well as lay use. It is essentially the story of the vitamines and is presented in a manner to hold the attention of the reader from beginning to end of the volume.

The author advances the proposition that too much stress has been placed on biologic diseases and too little stress has been placed on the conditions which permit such invasion. Vitamine deficiency diseases must be recognized as such and treated by proper diets. Not only are beri-beri, pellegra, scurvy and rickets, vitamine deficiency diseases, but tuberculosis, ophthalmia, mucous colitis, arteriosclerosis, certain forms of heart disease, etc., are vitamine deficiency diseases.

Among foods deficient in vitamines are white bleached flour, most breakfast foods, canned meats, some kinds of canned goods and refined sugar. Vitamine deficiency diseases are preventable by abundant sunshine and by highly nourishing foods in combination such as whole wheat bread, orange juice, milk and cream, butter, green vegetables, eggs, fruits and fresh meat, to which other foodstuffs may be added.

Food fads and cults and starvation treatments should be avoided since they do not grasp the whole problem. High vitamine diets are the sine qua non.

MEETING OF NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The Nebraska Academy of Ophthalmology and Otolaryngology convened Monday evening. May 22, at the Omaha Club, for the twentieth annual meeting.

Dr. W. H. Heine of Fremont was elected President.

Dr. Clarence Rubendall of Omaha Vice President.

Dr. J. C. Peterson of Lincoln Secretary-Treasurer.

Dr. A. G. Pohlman, dean of the University of South Dakota College of Medicine, was the guest of honor. He addressed the meeting on "Theories of Audition, Visualized and Auditized and their Relation to the Problems of Conduction and Perception Deafness."

Dr. Pohlman visualized the various theories and proved why none of them were tenable in the light of modern knowledge. He showed why the structures of the middle ear were necessary for acute hearing and visualized how a plug of vaseline cotton placed against the oval window opening forms a vibrating structure which conducts the sound waves from the external air to the fluid of the cochlea.

He proposed as a means of treatment in cases of deafness with loss of the structures of the middle ear, an operation to epithelize the oval window opening or the introduction of a permanent prothesis against the opening.

The modern oscillator is an accurate test of hearing. The apparent discrepancy between tuning fōrks and the audiometer is due to faulty tuning forks and not the audiometer.

—Clarence Rubendall, Omaha.

NEWLY ELECTED OFFICERS

The newly elected officers of the Nebraska State Medical Association are as follows: Dr. Joseph Bixby, Geneva, president; Drs. J. L. Pinney, Hastings, and Dr. William Shepherd, Rulo, vice presidents; Dr. R. B. Adams, Lincoln, secretary-treasurer, (reappointed); Dr. A. P. Overgaard, Omaha, Dr. H. J. Lehnhoff, Lincoln, Dr. W. R. Boyer, Pawnee City, (reelected), Dr. E. L. Brush, Norfolk, councilors; Dr. B. F. Bailey, Lincoln, was reelected delegate to the American Medical Association; Dr. J. S. Welch, Lincoln, was renamed delegate to the council on medical education.

Elections to committees were: Drs. C. W. M. Poynter, Omaha, public activities; A. P. Overgaard, Omaha, student loan fund; F. A. Long, Madison, journal and publication; C. A. Hull, Omaha, medical-legal advisory.

LECTURES IN PEDIATRICS

The following from the *Illinois Medical Journal* gives us an idea of the way they do things in that state and should make us in this state take notice, says our committee on medical education:

> During the summer and fall a one day lecture course in pediatrics will be conducted in eleven districts of Illinois, under the auspices of the American Academy of Pediatrics and the educational committee of the Illinois State Medical Society. The following cities have been tentatively selected as the centers: Chicago, Rockford, Rock Island, La Salle, Peoria, Springfield, Quincy, Champaign, East St. Louis, Effingham and Benton. Subjects to be covered by the course include care of the new-born, care and feeding of infants, preventive pediatrics, behavior problems and discipline in children, and general treatment of the sick child. The five pediatricians who have been selected to organize groups of teachers are Drs. Isaac A. Abt, Julius H. Hess, Joseph Brennemann, Clifford G. Grulee and Robert A. Black, all of Chicago.

OUTSTANDING PIONEER OBSTETRICAL EXPERIENCES—PATHETIC, HUMOROUS

INDIAN MOTHER EVE AND THE BIG ROLL OF BILLS

About 6 p. m. the latter part of August, 1915, I received a phone call to take care of a confinement case. I asked the name and it was given as White. The location I recalled as an Indian farm. From the name given I surmised it was a white family that had leased the place. On arriving I was surprised to find a number of Indians at the place. Inquiring if this was the place where a doctor was wanted to take care of a confinement case I was told it was. I took my Ob bag and walked in the house. Mr. White came up and informed me the patient was in a tepee just outside. Pulling aside the flap I was astonished to see a young woman stark naked lying on a bed of new mown hay. To my greeting no response was made. To my suggestion that she enter the house no reply was made. Asking her if she could understand English, met with an affirmative nod.

Inspection of the house showed it to be in good order with a clean bed and bed linen. I informed her that unless she went into the house and availed herself of the facilities present I refused to wait on her. No response was made to this request. I began to make the preliminary movements as if to leave. The woman got up, walked to the house, entirely nude, and occupied the bed. The baby was born in about twenty minutes. Mr. White asked the sex of the baby and upon being informed it was a boy began to chant. Curious to know the reason for this he informed us that such was the custom of his tribe at the birth of a baby boy; that it would instill all the virtues and none of the evils of life.

About this time a dozen curs that were lying about the house noticed the odor of blood and all came in howling as loud as possible. I asked Mr. White to remove the dogs. This he did by making a place kick with half a dozen dogs that came within reach of his boot.

Being ready to leave I asked him for my fee. Upon being informed that it was thirty-five dollars, he turned Scotch. I refused to be haggled down. Thereupon he turned up one corner of the mattress upon which the patient was lying and pulled out a roll the size of a fist, pealed off a brand new fifty dollar bill and asked for the change. I did not have it but persuaded him to look through the roll to see if he could not find it. After considerable jostling of hundreds, fifties, twenties, tens, and fives the correct amount was found.

The next day I received a call to come back. On arrival, about a dozen Indian women were sitting on the porch. None responded to my salutation. I entered the house, walked into the room where I had left the patient. The bed was nicely made up, but no patient or papoose. Returning to the porch I asked what became of the lady and the baby. None answered. Demanding the reason they had sent for me one answered that she wanted me to look at the baby's cord. Asked if she was the mother, she replied by nodding her head.

The cord was inspected and found to be normal. She handed me a ten dollar bill.

I have attended other Indian women but without the ludicrous event attending this one.

—John Buis, Pender.

ALLERGY HINT V

Sinus infections are often secondary to nasal allergy. Both factors must have proper consideration in solving the case.

—Edw. S. Maloney..

TUBERCULOSIS HINT IX

The treatment of the early or minimal case is often more of a mental job than a physical one. This does not mean any vast refinements of psychiatry; it means good old-fashioned common sense in understanding and handling human nature.

—Miles J. Breuer, Lincoln.

MEDICO-LEGAL DISABILITIES XI

In the consideration of an injury of a claimant in which unintentional external force is applied by the injured or another "the force" is the deciding element, and if the force is the cause, the injury is a result by "accidental means or cause."

—Czar Johnson, Lincoln.

EDITORIAL PARAGRAPHS

It is stated that a serum for the treatment of undulant fever has been developed at Cincinnati.

The American Congress of Radiology will convene at the Palmer House, Chicago, September 25-30.

It appears that in New York state in 1930 there was one malpractice suit for every twenty-two physicians. This shows the possibilities and the dangers confronting the medical profession.

A medical friend in the southern part of the state lapsed by neglecting to renew his narcotic license and got into trouble with the federal authorities.

Arrangements have been made to have the American Society for the Control of Cancer make a cancer survey of this state this summer.

What's in a name? A whole lot. Let us remember that it is the Nebraska State Medical Association and not the Nebraska State Medical Society as printed on the badges at the recent annual meeting.

"The Ophthalmic Lesions of Botulism: Additional Notes and Research" by Dr. Charles M. Swab and Dr. Herbert F. Gerald, Omaha, was published in the *British Journal of Ophthalmology,* for March.

A worthwhile feature of the annual meeting in Omaha was the talks given before various lay groups touching on health topics. These talks were scheduled by the Omaha committee and were given by outstate physicians.

From two sources we get the startling statement that a million dollars worth of medical care is given to charity, in Omaha, annually and that the paupers and indigents cost Nebraska in medical care $27.000,000, annually.

McEnery and Brennerman (*Am. J. Dis. Chil.,* for October, 1932), strongly advocate the aspiration treatment of empyema in children, since children do not react well to the open operation. The accumulating evidence of many observers is in favor of the aspiration treatment.

The State hospitals for the insane are again crowded and unable to care for all patients upon whose behalf admission is being sought. A recent statement is to the effect that Lancaster county is caring for nine such patients and Omaha for about fifty, while there is an undetermined number outstate.

The alarming prevalence of venereal diseases can be grasped from a statement emanating from St. Louis, which says that the care and treatment of venereal diseases in public institutions, in private institutions, by private physicians, and the examination of prostitutes in that city costs over $207,000,000 annually. St. Louis is but an example of metropolitan centers.

One feature of the medical exhibit of the Mallinckrodt Chemical Works of St. Louis. to be shown at the Chicago Century of Progress Exposition, will be a pictorial presentation of some historical events in the development of medicine. Copies of authentic drawings, sketches, wood cuts, and engravings will illustrate the history of the control of pain, showing the valient efforts of physicians in the past seeking means to alleviate this suffering.

A very much appreciated gesture made by the Auxiliary to the Omaha-Douglas County Medical society was the recent presentation of $100 to the Medical Student Loan Fund of the Nebraska State Medical Association. The Auxiliary of the Madison Six County society had previously given $75 to the same fund.

Our distinguished author-friend, Dr. D. T. Quigley, Omaha, is quoted in a feature article as saying that if people watched their vitamins and ate properly they would live 225 years, which again reminds us that

"Methuselah ate what he found on his plate
And never as people do now,
Did he take any note of the calory count;
He ate it because it was chow.

* * * * * *

And he lived over nine hundred years!"

Considerable comment centers around a Nebraska surgeon who operates a hospital and who has for more than one year operated under the plan of "No charge for major surgery." The assumed reason for this heretofore unheard-of procedure is that this is his contribution to the relief of the economic stress affecting the country. The financial report of the hospital indicates a cash profit from the operation of the hospital for the year antedating March 1, 1933, of $2,256. You may like it or not.

There was a high civilization in Egypt B. C. 10000, and probably earlier. and the fame of Egyptian medicine spread to all the then known parts of the world. Cyrus the Great heard of it, and sent to Amasis, King of Egypt, for an oculist, for, as the records show, medical specialism had been carried nearly as far as in our own times, and Darius had Egyptian physicians at his court. As the Ebers and othe papyri prove, materia medica and therapeutics were remarkably well developed.

A portrait of the late Dr. Hermann von W. Schulte, dean of the Creighton medical college, was unveiled and formally presented by the medical faculty to the university before 200 faculty members, students and friends of Dr. Schulte at Hotel Blackstone, Omaha, recently. Dr. Bryan M. Riley, professor and head of the department of medicine, made the presentation speech, while President Patrick J. Mahan, S. J., of Creighton received it on behalf of the university. J. Laurie Wallace, who painted the portrait, and Mrs. Schulte were honor guests.

The State department of health says: "Tuberculosis dropped to a new low of 20.1, the first drop under 25. Again Nebraska leads the nation in lowest death rate from this disease. according to present available data, a similar position being held in 1931. The estimated tuberculosis mortality rate for the United States in 1932 is about 60.4, and the morbidity record shows 1.63 reported cases per death. Here Nebraska does not rate so well, many cases not being reported, as evidenced by the record which reads 168 cases reported in 1932—this being .4 below a case per death. Early diagnosis is important, likewise prompt reporting to enable institution of preventive measures."

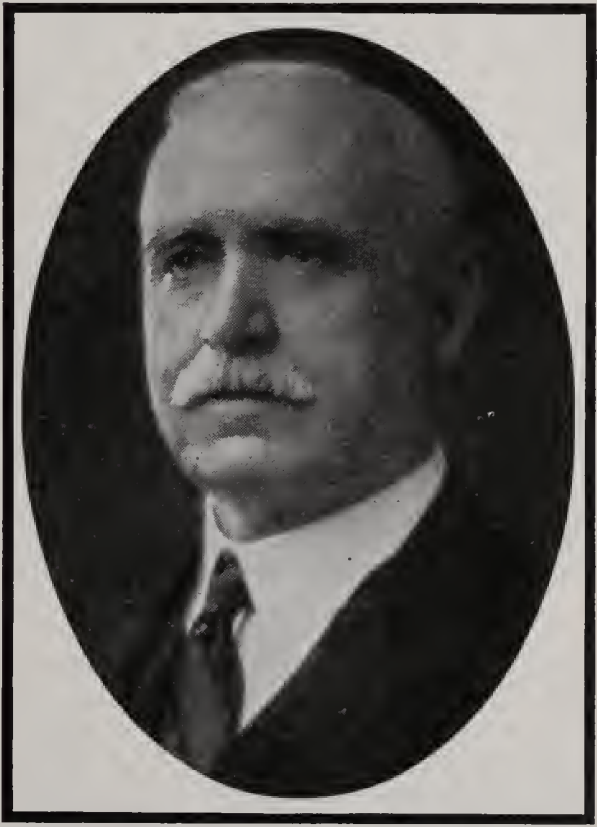
The Iowa plan for caring for indigents and paupers has called forth considerable interest from all sections. The county medical society contracts with the board of commissioners for a fixed annual sum. Such funds are used for medical library books and equipment, medical society dues, and contingencies. Any remainder is prorated among participating members; the proceeds amount to about $100 per year apiece. The plan has several advantages: The medical society has an income previously denied; the county commissioners have a more simplified expenditure for care of the indigent; more doctors care for the indigent; a better coordination of physicians, applicable to this and other problems, is brought about.

Dr. Otto H. Schwartz, professor of obstetrics and gynecology of Washington university, St. Louis, addressed 300 doctors, medical students and nurses at the University of Nebraska College of Medicine, April 27, on "Prevention of Puerperal Infection." The lecture was sponsored by Phi Rho Sigma, Nebraska medical fraternity, in honor of Dr. A. B. Somers, a former professor at Nebraska. "Prevention," said Dr. Schwartz, "lies wholly and simply in antiseptic treatment administered just before and during the early stages of labor. The germs, in virtually every case, already are present, though inactive, in the mother's body. Unless they are destroyed by antiseptic, they become active immediately after birth, and the mother's life is imperiled. The wise physician will take the proper measures. The wise mother need not fear."

There is a good deal of Irish blood up in the O'Neill country and it boiled the other day when the doctors got together to inquire why the county board found it feasible to pay out perfectly good money by the thousands for the defense of two bank wreckers and a murderer who plead poverty and why necessary medical aid for paupers and indigents was refused. One of the physicians said: "It does seem that when thousands are spent for the protection of adjudged guilty bankers and murderers, and when other thousands are spent for food, coal and clothing for poor, that the doctors for that same class should also be paid. At any rate, the doctors are going on a cash basis because they have been driven to it. They have been asked to cut their fees and then were compelled to sue the county. A judgment was obtained and now they must wait for a special levy to cover the judgment." Again we repeat: The county boards have to be retaught by supreme court decisions every now and then, that physicians have rights the boards are bound to respect.

NECROLOGY

Albert R. Mitchell, Lincoln, Nebr.; native of Cambridge, Ill.; Rush Medical College, 1879; member of the Board of Trustees of the American Medical Association for the past seventeen years, and chairman of the board at the time of his death; Nebraska delegate to the American Medical Association, 1908 and 1910-1916; one of the founders of the Lancaster County Medical society and sometime its president; dean and professor of anatomy and clinical surgery of the Regular Medical Department of the Nebraska



ALBERT R. MITCHELL, M. D.
(Cut, Courtesy of Jour. A. M. A.)

University during its existence at Lincoln, from 1883 to 1887; surgeon general of Nebraska during the Spanish-American war with the rank of colonel; president of the Nebraska State Medical Society in 1900; sometime, president of the American Association of Railway Surgeons; chief of staff, St. Elizabeth's hospital, Lincoln, for many years; honored by the profession in 1929 in celebration of fifty years in the profession in Lincoln; medical director Bankers Life Insurance Company of Nebraska; surgeon of several railroads entering Lincoln, died May 26, 1933, of terminal pneumonia consequent upon a heart and kidney upset, aged seventy-seven years.

A man of outstanding physique whose appearance attracted attention in any group, Dr. Mitchell was a man of much personal charm, friendly toward all his fellows and yet somewhat reserved in his demeanor. He was very studious, and read all the medical periodicals as they appeared. He also read a great deal outside of medicine, and was probably more broadly educated than most men in our profession. He was always a gentleman and loved the finer things in life. He was interested in all medical activities and took a keen interest in the civic affairs of his home city and was a member of a number of luncheon and social clubs. As dean of the Lincoln profession and as the connecting link between the old and the new he will be greatly missed. May we copy a tribute given Dr. Mitchell from the Journal American Medical Association: The work of Dr. A. R. Mitchell for the American Medical Association was marked by an intense loyalty. He gave of himself to the fullest, particularly during recent years, when he came monthly to meetings of the executive committee. During the regular sessions of the Board he was active in discussion, invariably demanding complete medical leadership in medical affairs. He represented the best type of physician of the old school, keeping abreast of medical progress and holding fast to the traditions of the profession.

George H. Bentz, Kearney, Nebr.; Kansas City Medical College, 1902; practitioner at Fairfield, for 17 years until about eight years ago when he located at Kearney; served overseas in medical corps during the World War; an active Legionnaire he was local post commander at his death; member Nebraska State Medical Association; a man interested in all civic activities of the community; died June 3, 1933, after an illness of about seven weeks following an automobile collision April 12, of complications resulting from the accident, aged sixty-two years. A widow, two daughters and three sons survive.

William W. Claybaugh, Grand Junction, Colo.; Rush Medical College, 1883; formerly in practice at Firth and Union, Nebr., died at Grand Junction early in June, aged about eighty-six years.

AUXILIARY NEWS LETTER

The Woman's Auxiliary to the Nebraska State Medical Association met in Omaha on May 23, 24 and 25, with headquarters at the Fontenelle Hotel.

On Tuesday, May 23rd, at 10:00 A. M. the preconvention board meeting was held. At 12:30 the ladies were taken through the Joslyn Memorial after which they went to an organ recital.

On Wednesday at 10:00 a. m. the annual business meeting took place, Mrs. Clyde Roeder presiding. Mrs. H. R. Miner, Falls City, was elected president-elect. At 12:30 a luncheon at the Fontenelle Hotel was given, and Mrs. James F. Percy of Los Angeles, national president, was honor guest. She spoke on the work of the auxiliary, after which Dr. A. E. Cook of Randolph, the out-going head of the State Association, spoke, followed by a talk by Dr. Adolph Sachs of Omaha, in-coming president. He told of the effective aid given by the women to the work of the Medical Association.

One of the highlights of the convention was the style show, presented by the daughters of Omaha physicians. On an elevated promenade in the main dining room of the Fontenelle Hotel they showed just how the well dressed doctor's wife or daughter should look at morning, luncheon, sport or evening affairs. The daughters were Helen Poynter, Margaret and Elizabeth Tomlinson, Gwendolyn Sachs, Peggy Young, Hariette Conlin and Mary Elizabeth Jonas.

Another honor guest at the Wednesday luncheon was Mrs. B. F. Williams of Lincoln, in-coming president. At 6:30 P. M. the annual banquet was held in the Fontenelle Ballroom. A "Carnival Abroad" was staged. In colorful and authentic costume seven groups from the International Folk Arts Society danced a succession of "old country" dances. Mrs. C. C. Tomlinson of Omaha was chairman of the entertainment committee.

* * * * * *

Thursday at 8:15 Mrs. F. A. Long of Madison, entertained for Mrs. J. F. Percy, National President, the officers and past state presidents, at breakfast at the Fontenelle Hotel. At 9:30 A. M. the post convention board meeting had a session with Mrs. B. F. Williams of Lincoln presiding. At 12:30 Mrs. Adolph Sachs of Omaha, wife of the in-coming president of the State Medical Association, entertained at luncheon at the Omaha Country Club. The luncheon was in honor of Mrs. James F. Percy. Others present were Mrs. Clyde Roeder, retiring president, Mrs. B. F. Williams of Lincoln, in-coming president, Mrs. H. R. Miner of Falls City, president elect, Mrs. C. C. Tomlinson, retiring president of Omaha-Douglas County Auxiliary, board members and county officers.

* * * * * *

The Richardson County Medical Auxiliary entertained members of the Medical society and extra guests at a 6:30 o'clock dinner on May 17th at the home of Dr. and Mrs. J. M. Greene at Falls City. The affair was attended by thirty-six.

Following the dinner, the medical society held a separate meeting.

At the auxiliary meeting Mrs. William Shepherd of Rulo was elected a delegate to the state convention. Mrs. O. F. Lang gave a yearly report. Talks concerning the work of their organization were given by Mrs. R. T. Nichols and Mrs. Paul Conrad, both of Hiawatha, Kansas.

THE SOCIETIES

Members of the **Richardson County Medical Society** were entertained May 18 by the Ladies Auxiliary at 6:30 o'clock at the home of Dr. and Mrs. J. M. Greene, Falls City. Separate meetings of the Medical Society and the Auxiliary were held following the dinner.

Doctors from the Brown County (Kansas) Medical Association presented the program at the Medical Society meeting. Dr. S. M. Hibbard of Sabetha read a paper, "Eclampsia," and a paper on "Urinary Infections of Children" was read by Dr. A. H. Haynes of Sabetha.

Dr. Bertha Thompson of Lincoln was elected president of the **Nebraska State Medical Women** at a dinner meeting held at the Y. W. C. A., Omaha, Tuesday evening, May 24. Dr. Emilia H. Brandt of Omaha was named vice president, and Dr. Inez C. Philbrick of Lincoln, secretary-treasurer.

Dr. Mary MacVean Edmonds of Nebraska City read a paper on "The Medical Woman in Public Health," Dr. Ellen Kelly of Omaha talked on "Preventive Dentistry in Children," and showed illustrative lantern slides.

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THE MANAGEMENT OF HEPATIC DISEASE*

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In diseases of the liver a clean-cut plan of treatment such as has been generally accepted in diseases of the heart, gastro-intestinal tract and kidneys has been lacking. This is peculiar since diseases of the liver and their manifestations have been known since the time of Galen. During the past few years clinical investigation of the behavior of the liver, both in health and disease, has developed to the point where one can with some degree of certainty select therapeutic procedures which may influence the progress of hepatic disease. If we are to formulate a plan of attack on diseases of the liver which may have some prospect of success we should, I believe, first consider the peculiarities of the liver in regard to anatomy, physiology and pathology.

From a biological point of view the liver may be considered a mass of cells possessing many primitive characteristics. The liver, as a whole, as well as the hepatic cells themselves, is constantly changing in processes of metabolism such as food, water and blood storage. The hepatic cells, as a mass, are peculiarly sensitive to physical, chemical and biological processes. They have at the same time a prodigious ability to withstand damage, with a large margin of safety; 20 per cent of the bulk of the liver is believed capable of carrying on normal functional activity.

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*From the Medical Department, Northwestern University Medical School, and Passavant Memorial Hospital, Chicago. Abstract of a Clinical Lecture, illustrated with lantern slides, given before the Nebraska State Medical Association at Omaha, on May 25, 1933.

In the course of its development the liver has changed from a simple tubular gland concerned with the secretion of bile to an organ which not only retains this function but has acquired an intimate relationship with the hematopoietic and vascular systems, receiving from the blood material which it stores or modifies and later returns to the general circulation. Thus it has acquired endocrine characteristics.

Certain features of the anatomy of the liver should be kept clearly in mind by the clinician. Among these should be mentioned the relatively massive network of sinusoids which receives blood from the portal system, surrounds the liver cell cords and lies in intimate contact with the outer surface of the hepatic cells. There are no valves located between the network of sinusoids and the heart, accounting for the ease with which passive congestion of the liver may occur. The hepatic cells themselves probably constitute the walls of the biliary canaliculi, accounting for the inevitable appearance of jaundice in processes associated with liver cell necrosis.

Aside from the hepatic cells the liver possesses but one other type of cell which is concerned in physiologic processes, namely the stellate cells of v. Kupffer. These so-called fixed-wandering cells, believed to be identical with reticulo-endothelial cells elsewhere, form an incomplete lining of the sinusoids, and are chiefly concerned in pigment metabolism and phagocytosis. Their stellate prolongations are continuous with the connective tissue framework of the liver and they are believed to be concerned in the process of connective tissue deposit in cirrhosis.

From the point of view of pathogenesis a fairly uniform sequence of events may occur in the liver as a result of a variety of injurious agents produced by infections, intoxications, and anoxemia. Four distinct but related processes may ensue: (1) Parenchymatous degeneration—Cloudy swelling, fatty degeneration and necrosis, in order of severity, may result. Prompt recovery from any of these may occur with the withdrawal of the injurious agent, or complete destruction as though from a cytotoxic or cytolytic agent may injure the liver parenchyma beyond repair (acute yellow atrophy). Hyaline necrosis probably occurs in catarrhal jaundice, infectious jaundice and yellow fever, in which the parenchyma but not the framework of the liver is involved. This may be extensive and still, under favorable conditions, be followed by complete restitution. Toxic necrosis (due to arsenic, cinchophen, etc.) in which all structures of the liver, including the framework, are involved, often with extensive round cell infiltration and hemorrhage, is peculiar in that restitution to a normal anatomic status without permanent liver injury apparently does not take place. The liver injury of the "toxic jaundice" type is apt to be a progressive process, instituted by a toxic agent but often continuing after the agent has been withdrawn. It should be reiterated that jaundice inevitably results from necrosis with the consequent disruption of the liver cell cords since the liver cells themselves constitute the essential, if not the only, elements which make up the wall of the biliary capillaries. All gradations of liver cell damage are encountered from mild ("catarrhal" jaundice) to overwhelming (acute yellow atrophy) processes. Incidentally it is now believed that other conditions being equal, liver cell necrosis varies inversely with the state of glycogen storage within the cell.

(2) Regeneration—The liver cells are known to possess a remarkable ability to regenerate, in which respect they exhibit "primitive" or "embryonal" characteristics. In the normal dog Mann has demonstrated that six-sevenths of the bulk of the liver will regenerate within six weeks after excision, and Whipple has estimated that if one applies the results of experimental resection of the liver to man, 150 grams of liver cells per day may regenerate under favorable conditions.

In pathologic states although regeneration of liver cells is less evident than in resection experiments, it is nevertheless material and may be prompt or delayed. Whipple has stated that regeneration occurs at maximum speed in animals fed upon a high carbyhydrate diet, and that little regeneration occurs in the presence of obstruction of the portal vein or of the common bile duct. Regeneration does not occur in the fasting state.

(3) Connective tissue replacement (cirrhosis), associated with round cell infiltration, is a usual sequence of injury to the parenchyma and framework of the liver. It may result from a variety of toxic agents. It may be induced, apparently without rhyme or reason, on slight provocation. The stellate cells of v. Kupffer, apparently because of their intimate relationship to the connective tissue to which they are thought to belong, are chiefly implicated. With the progress of cirrhosis the portal circulation becomes gradually divorced from contact with the liver cell cords.

(4) Compensatory circulation — With the gradual but progressive restriction of the portal

circulation the blood from this area finds its way back to the general circulation by devious channels, as by way of the esophageal, hemorrhoidal and para-umbilical veins.

From the pathogenic standpoint, therefore, a sequence of events may be instituted in the liver by many hepato-toxic substances; namely, degeneration, regeneration, connective tissue replacement, and compensatory circulation. It should be noted that a balance may be maintained as between degeneration and regeneration, and between connective tissue replacement and compensatory circulation. If a balance between these various factors is maintained the process may be entirely "silent" or non-symptomatic. However, the balance may be disturbed in respect to any one of these factors under which conditions the process becomes manifest or symptomatic.

Of the many functions of the liver, those associated with carbohydrate metabolism lend themselves most readily to therapeutic manipulation. Recently Althauser$^{(1)}$ has written most interestingly on this subject. The liver not only stores carbohydrate as glycogen but may convert and store as glycogen roughly 58 per cent of the protein and 10 per cent of the fat ingested. In the fasting state the liver cells contain but little glycogen and the cytoplasm is concentrated and granular. After large amounts of carbohydrate by mouth the liver cells become literally filled with glycogen and appear large, rounded and clear. It is noteworthy that a low glycogen level invariably indicates a shortage of readily available carbohydrate, and it appears that such cells are more readily injured by toxic substances than cells which, well stored with glycogen, are apparently more refractory to damaging agents. Furthermore, an adequate glycogen content seems to favor regeneration and also shortens the coagulation time of the blood. Much may, therefore, be gained by placing a patient with hepatic disease upon a high carbohydrate diet. The average daily diet contains approximately 300 grams carbohydrate; to this may be added 200 to 300 grams dextrose with fruit juice to insure maximum glycogen deposit in the liver. Except under unusual conditions adequate amounts of carbohydrate may be given by mouth and only when the gastrointestinal tract is intolerant need it be given intravenously. When not otherwise tolerated, or when time is an important factor glucose in 10 per cent solution may be given intravenously. Occasionally it may be desirable to supply the cardiac or skeletal muscles with glucose directly by the intravenous method. The routine administration of glucose intravenously seems unnecessary. Since the rectum is intolerant to glucose in concentrations higher than 2 per cent, administration by this route is worthless.

The importance of whole bile in the intestinal tract has been emphasized by Ivy and by Whipple. Dogs with a total biliary fistula soon die of malnutrition, showing abnormalities of the bones, purpura, and disturbances of pigment metabolism. Apparently the human subject is more tolerant to exclusion of whole bile from the intestinal tract than is the dog; however, it is undoubtedly a matter of importance to have whole bile gain access to the intestinal canal. Clinical manifestations may to some extent be averted by feeding whole bile (ox-bile) by mouth as a substitute.

Alkalies or alkaline waters may be used to advantage as a routine procedure in facilitating drainage of the extra-hepatic bile passages in diseases of the liver or bile passages as suggested by Melzer many years ago.

The desirability of placing patients with hepatic disease on a low fat diet as is commonly prescribed is questioned by the observation that a "fat breakfast" as used in cholecystography will facilitate the drainage of dye from the gallbladder. Clinicians generally, I believe, have observed that patients with either chronic cholecystitis or hepatic disease, particularly in the presence of jaundice, do better on a low fat diet. The explanation of this is not clear; however, it may in part be explained by the probability that the metabolism of fat imposes an additional burden upon the hepatic parenchyma and that whole bile is required within the intestinal tract to facilitate the absorption of fat. In regard to the allowance of protein this should be radically restricted in cases of acute hepatitis on theoretical and experimental grounds in order to lessen the burden on over-taxed liver cells. The toxic effect of meat feeding in Eck-fistula dogs is well known. In chronic cases the protein intake should be sufficient to keep the patient in nitrogen balance (approximately 1 gram per kgm. of body weight).

The control of impending or manifest ascites may, in part at least, be accomplished by the manipulation of the acid-base balance of the body, such as is employed in the diuretic regimen commonly prescribed in the control of edema of cardiac or renal origin. Undoubtedly the state of the portal circulation and the competency of the resulting collateral circulation when the portal circulation is inadequate are primary factors in determining the occurrence of ascites; however, the state of the acid-base balance of the body is an important contributory factor in the accumulation of ascitic fluid and lends itself to therapeutic manipulation. Procedures which tend to shift the pH of the tissues and extracellular fluids toward the acid side (that is, withholding base and administering acid) result in the mobilization and excretion of base and with it water. Practically, since approximately 90 per cent of the total base in ascitic fluid is in the form of sodium, and since the 3 to 6 grams of sodium in the daily diet are added in the form of salt in the preparation of foods, it is easy to restrict base by the simple procedure of withholding salt; and if, in addition, ammonium nitrate or a similar acid-bearing salt is administered in quantity (6 to 9 grams daily) conditions favorable to mobilization of base and with it the excretion of water, are effected. An occasional acute diuresis by a mercurial diuretic such as salyrgan intravenously may greatly facilitate the process. By such means the control but not the complete elimination of ascites may be effected in most cases, affording considerable relief to the patient but probably not materially influencing the course of the hepatic disease. Such control, rather than the repeated tapping of the abdomen, has the advantage of preserving for the patient the large amount of serum protein present in ascitic fluid.

The recognition of the etiologic agent which may be causing either acute, subacute or chronic hepatic damage may tax the resources of the clinician. Arsenic, phosphorus, copper, alcohol and cinchophen, or the presence of chronic cholecystitis, may be suspected, and if demonstrated should be eliminated if possible. All may institute latent, although progressive, hepatitis. On account of the great functional reserve and, therefore, clinical "silence" characteristic of the liver, much time may have elapsed between the onset of material hepatic damage and the appearance of clinical manifestations suggesting hepatic disease.

The case of cinchophen is characteristic. Cinchophen has been widely used as an efficient analgesic in gout and rheumatic states. It may be available on the open market as an anti-rheumatic remedy under the guise of many trade names, some of which do not even suggest the nature of the effective agent which they contain. A long period of latency may ensue after the taking of cinchophen before evidences of hepatic damage in the susceptible individual may be recognized. It was five years after atophan was first placed on the market before its untoward effect of instituting progressive hepatic damage in the susceptible individual was first recognized. The clinician when confronted with a case of toxic jaundice, acute or subacute liver atrophy, should be on guard and suspect cinchophen poisoning in patients who give a rheumatic history or have taken anti-rheumatic remedies. Other drugs as possible factors should be considered and dealt with accordingly.

CONCLUSION:

The outlook of patients with both acute and chronic hepatic disease is believed to be materially influenced by management which takes into consideration such peculiarities of the liver as lend themselves to therapeutic manipulation and are known to influence hepatic function favorably.

REFERENCE

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ENEMIES OF THE GENERAL PRACTITIONER*

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I am taking advantage of the privilege conferred by our constitution on the chairman of the medical section of the program committee to make a few remarks unrelated to the science of medicine in any way. What I am going to say will seem very narrow, prejudiced and unfair to some, but only a childish intellect still believes that the world is run on the principle of right and justice. All thinking persons know it is run on, in a broad sense, love and hate;—in other words, prejudice, likes and dislikes, are the important things, and the general public thinks emotionally, not intellectually.

I am going to say a few words about the enemies of the general practitioner. What I say is prejudiced, and is meant to be so.

The great bulk of medicinal service is still being given by the general practitioner, and being one myself I suppose I am prejudiced in their favor. The general practitioner has more enemies, open or insidious, than any other branch of medicine. I would like to point out a few of our enemies, that we may be better prepared to defend ourselves.

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*Chairman's Address, Medical Section. Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

The first I list, are the school, county and welfare nurses. Nowadays the school nursing operates like this:

1st. The hysteria about weights,—the blue and white card system. All children from 1 to 2 ounces under weight, no matter whether they are from lean, hungry Yankee stock or not, are picked out by the school nurse and, while perhaps not openly but anyway surreptitiously, are sent to the pediatrician.

2nd. Any child who is so unfortunate as to have a normal pair of tonsils, (that is, for a child),—a large, well developed pair of tonsils easily seen and ready and anxious to protect the child from infection by these large surface areas, is sent to the throat man.

3rd. Any child having a bellyache, probably from round worms, dislike of school, or from running too hard at play, is sent to the surgeon.

4th. Any child that coughs from any one of a thousand simple reasons is sent to the T.B. specialist, and impetigo to skin specialists.

5th. Any child that plays hookey because he is a potential naturalist, farmer, explorer, etc., is sent to the psychiatrist.

The upshot is that the mother finally looks upon the honest G.P. as an old foggy, and when the G.P. tells the mother that one ounce under weight means nothing, that pain in the belly after exercise is quite normal in children, that impetigo is easily cured, that most children cough with a cold, and that children play hookey because they are human beings, the mother promptly deserts the G.P., on the ground that he takes no interest in little Willie or that he doesn't know anything.

One of the reasons that this is true is, of course, that the nurses, being of the feminine gender, are all attached to smooth, attractive, well decorated personalities, enjoying sumptuous offices, large cars, and not having to be up all hours of the day and night have the time and urbane tempers to flatter and pamper their vanity. The specialists usually have the happy faculty of agreeing with the nurse, which also helps inflate the nurse's ego.

Of course, this does not apply to the honest, square shooting nurse who really understands her position in the medical world.

Another enemy of the general practitioner is the lay welfare society. No community is so small but that it has either an official welfare society or some person who constitutes herself as one. I say "herself" as it is usually a woman who has a suppressed complex that she is either sublimating or rationalizing by her public activity.

These groups or persons usually have read or heard of the activities of other bodies in larger centers, and immediately start their pernicious activities in the smaller communities. It works out like this:

One member of course is the chief, and runs the whole show. The other members are usually social satellites. The chief always has some specialist who is her favorite doctor, or failing a specialist, she has a favorite doctor to whom she is emotionally conditioned. He is the one that is always consulted, and all people coming in contact with these various health societies are either openly or by suggestion sent to these favorite men, who naturally concur in some degree with the diagnosis made by the lay people. Perhaps before this contact the patient was getting along pretty well with his own doctor, but let the magic word "specialist" be spoken, and the tongue thrust in the cheek, the eyes rolled upward, and the suggestion given not by words but by deeds that the patient should "go to my doctor,"—and your patient is lost.

The Sixth, and I am sorry to say the worst one, is we ourselves.

Every doctor that allows a county or school nurse to remain in his community that is biased against the general man is himself guilty. We should take aggressive action against them, see the county commissioners, and protest about unfair tactics. Take your female patients into your confidence; the chances are they are jealous of the nurse anyway, and use fire to fight fire. Look upon all welfare organizations with suspicion. If they are fair, you have done them no harm; if they are inimical to you, watch them. Go to your own friends and voice your suspicions to them, and they will look after your welfare also, as there is no person or group prominent in any way but what has created jealousy among others, and when your living and professional reputation are at stake, I believe any means of fighting is legitimate.

Another way in which we become our own enemies is due to our laziness. I believe that there is very little difference between doctors, and the main difference is in our energy. We do not examine our patients. If every doctor would do the following simple things in every case coming into the office, the time consumed would be negligible and the benefit enormous.

1. Buy yourself a simple hemoglobinometer, either Sahli or Dare, prick the persons ear or finger, and look at the blood. Nearly all grave diseases have some anemia,—even leukemias have an anemia before they fall sick. If anemia is present, find the cause.

2. Look in the mouth. You can be the wise one that says bad teeth or bad tonsils.

3. Take a urine sample from every one, whether it is a cut finger or a boil, or what not. You will be surprised how the patients appreciate your interest, and you will be impressed at the number of diabetic and nephritic cases you will find.

4. Take everyone's blood pressure. The patient likes it, it does no harm, and you may learn a lot from it.

5. Listen to the heart with your stethoscope against the bare skin. The average patient judges the thoroughness of your examination by the amount of clothes he takes off. Let him have the pleasure of taking off his clothes, and if it is a woman, they are usually natural exhibitionists anyway, and are happy to have the opportunity.

6. Vaginal examinations: No matter what the patient complains of, if she is married and has had children, you should do a vaginal. Any number of polyps, erosions, displacements and fibroids will be found, and although they have nothing to do with the complaint that brought the patient in, you will be surprised how they appreciate being told of matters that need correction now or in the future, and the nice things they will say about how thorough you are. This does you no harm, and might do the patient some good.

SUMMARY

General practitioners are beset by many enemies, externally by the professional people, school and county and welfare nurses, who must be viewed with suspicion, and if necessary forced to be impartial, as when it comes to the point of losing their job or being prejudiced they will soon be fair to all; and internally by ourselves, who by lack of using the knowledge we have, and by pure laziness in not making examinations, allow our patients to become dissatisfied and drift to specialists whose stock in trade is examinations, or to the cults whose stock in trade is sympathy.

If I have seemed too harsh to the welfare bodies or to the public nursing profession, it is only because I have seen and felt the results of their pernicious activities; and while personally well equipped to defend myself both by attitude and temperament, I am afraid a good many of my fraternity are too honest or too timid to do as I do, and make vigorous protest against them.

A STATISTICAL STUDY OF 616 CASES OF DIABETES

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IN TWO PARTS—PART TWO

SURGICAL COMPLICATIONS IN DIABETIC PATIENTS

One out of every 3.2 of our patients had a surgical complication but one out of every two patients will require surgical treatment of some kind before he dies. The lives of surgical diabetics have been prolonged since the advent of insulin due to a greater knowledge of the problem and a closer cooperation between internist and surgeon.

SURGICAL COMPLICATIONS IN 616 CASES OF DIABETES

Anal Fistula	1	
Alveolectomy	9	
Appendicitis (Acute)	3	
Appendicitis (Chronic)	3	
Bunion (Infected)	1	
Brain Tumor	1	
Cataract	6	
Cancer—		
Bile Tract	1	5.7%
Bladder	1	
Breast	1	
Ileum	1	
Pancreas	4	
Sigmoid	1	
Uterus	2	
Cellulitis	14	2.2%
Carbuncle	8	
Cholecystitis	12	1.9%
Cyst (Bone)	1	
Dacryocystitis	1	

Deflected Septum	1	
Epithelioma	1	
Furuncle	4	
Fracture—		
Femur	1	
Toe	1	
Patella	1	
Pelvis	1	
Fibroids	4	
Glaucoma	2	
Gangrene—		
Feet	25	4.7%
Finger	2	
Scrotum	1	
Ear	1	
Gun Shot Wound and Amputation	1	
Hydrocele	1	
Hemorrhoids	1	
Hernia	3	
Mastoiditis	2	
Osteomyelitis of Jaw	2	
Papilloma of Bladder	1	
Prostate (Hypertrophy)	9	
Phlebitis	2	
Pelvic Cellulitis	2	
Peptic Ulcer	1	
Perinorraphy	2	
Polyp (nasal)	1	
Sinus Thrombosis	1	
Thyroid (Toxic Adenoma)	11	1.7%
(Exophthalmic)	5	.8%
Tonsils (Infected)	9	
Uterus (Suspension)	2	
Ulcer of Cornea	1	
Ulcer—		
Foot	15	2.7%
Face	1	
Abdomen	1	
Total Number of Surgical Complications 190 or 1:3.24		
Cases Operated Upon	104	
Deaths Following Operation	12	
Operative Mortality Rate	11.5%	

John(15) in a review of the statistics of various clinics found that in 3,676 operated cases there was a mortality rate of 12% or about one-third of what it was before insulin was discovered.

CLASSIFICATION
APPENDICITIS

Appendicitis in the diabetic may be atypical. It may simulate coma or, conversely, coma may simulate it. It can be successfully operated upon even though acidosis be present and it is advisable to operate early in such cases because infection increases acidosis and lessens resistance as times goes on. With insulin the danger of death in delay of the treatment of appendicitis is greater than the danger from coma. Joslin(3) says, "Surgical delays are dangerous under ordinary circumstances; but in the diabetic they are disastrous." This statement applies to all acute abdominal conditions.

GALLBLADDER DISEASE

12 or 1.9% of our diabetics showed this complication. When acute it demands immediate operative intervention; when chronic, time may be taken to prepare the patient. The removal of gallstone in any patient lessens the chances of his developing diabetes.

DISEASES OF THE THYROID GLAND

Hyperthyroidism was a complication in 2.5% of our 616 cases of diabetes; 1.7% were toxic adenomas, and .8%, exophthalmic goiters. Wilder(16) in 1,130 cases of adenoma with hyperthyroidism, found diabetes in 22 or 2% and in 2,300 cases of exophthalmic goiter, 15 or .6%. It is to be expected that we should find more cases of diabetes in the patients with adenomas than in the patients with exophthalmic goiters because as a rule they are older. Before the use of insulin in diabetes and Lugol's solution in hyperthyroidism, the mortality rate for patients with this combination was high for the hyperthyroidism increased their metabolic rate, burned up available stores of glycogen, and decreased the efficiency of the insulin unit. For this reason, hyperthyroidism, as does infection, increases the danger of coma. One of our cases developed this complication and it required very large doses of insulin to control the acidosis.

CANCER IN DIABETES

1.7% of our 616 cases had cancer. Joslin(3) reports an increasing frequency of cancer in diabetic patients and this is to be expected as more diabetics are getting to the cancer age. In 37 cases reported by McKittrick and Root(17) of cancer in the diabetic, cancer of the pancreas was found in 32.4%. Cancer of the pancreas may precede diabetes or may usher in the condition. The development of cancer of the pancreas, unless diabetes is already present, never leads to frank diabetes, according to Joslin. The diagnosis of cancer of the pancreas is extremely difficult. The x-ray may help but the final diagnosis must be made by evidence of cancer in other parts of the body. In adult diabetics whose diet and insulin dosage has been accurately determined but they still continue to lose weight, one must think strongly of this possibility. Insulin is much less effective when cancer of the pancreas is present. This was shown very strikingly in one of our cases.

SURGICAL CONDITIONS DUE TO DEFICIENT BLOOD SUPPLY
GANGRENE

6.3% of our 616 cases developed gangrene.

A.—ARTERIOSCLEROTIC

One-half of those who have diabetes suffer from arteriosclerosis and ultimately succumb to arteriosclerosis and its complications. Arteriosclerotic or senile gangrene is due to occlusion of larger vessels without infection. This type of gangrene is usually dry and the part withers and dies. We have had several of these one of which the toes of one foot dropped off and skin edges were brought together by adhesive strips. In these cases, often the diabetes is mild and arteriosclerosis marked. Pain is one of the characteristic symptoms. Frequently in the past history we find attacks of pain coming on suddenly with numbness in the foot suggesting local thrombosis of a terminal artery. In this type of patient, conservative treatment will save many lives. Gangrene may later be accompanied by infection and a policy of watchful waiting may prove advisable.

B.—EMBOLIC OR THROMBOTIC GANGRENE

In this type there is a sudden onset with severe pain and a sensation of burning, due to an embolous locating in a large vessel coming from some distant source. Gangrene develops suddenly and its distribution depends upon the size of the vessel involved.

C.—TRUE DIABETIC GANGRENE

There is evidence of circulatory disturbance over a long period of time as manifested by numbness and tingling. Gangrene in this type of case follows some minor trauma such as the pressure of an ill-fitting shoe, the trimming of a toenail, etc., which become infected and may cause gangrene, the extent of which will depend upon the collateral circulation. This type of gangrene develops in old diabetics in whom sclerotic changes are already present. Joslin, however, has recently shown a series of youthful diabetics showing arteriosclerotic changes as well.

TREATMENT OF GANGRENE
PREVENTIVE TREATMENT

In the diabetic patient over fifty it is more important that he keep his feet clean than his face. Tight or ill-fitting shoes, coarse stockings, rough linings to shoes, or any unevenness that may cause a break in the skin may cause infection and gangrene. Lehmann(18) calls attention to the fact that the Japanese who care assiduously for their feet, wear thick socks and sandals, do not suffer from diabetic gangrene so frequently as do other races. The negro, on the other hand, is particularly prone to develop gangrene for the reason that he is prone to arterial disease and does not take as good care of his feet. Exercise for the diabetic is important in preventing gangrene by increasing circulation in his legs, and also, for increasing storage of carbohydrate in muscles, (normally muscles store one-half of the carbo-hydrates of the body.) Individuals who complain of pains of intermittent claudication, often erroneously interpreted as being due to neuritis, arthritis, or flat feet, should be especially careful about the care of their feet. They should be advised against sitting in a position in which circulation is impaired; should be taught the meaning of numbness, and tingling, and particularly should they be advised against walking or standing too long in one position when these symptoms present themselves. In this type of patient, Buerger's vascular gymnastics are valuable. These consist of elevating the affected limbs to an angle of 60 or 90 degrees, resting in this position from thirty seconds to three minutes, depending upon the time necessary to produce blanching of the extremities, and then the limb is placed in a horizontal position during which time dry heat is applied. This cycle should last from six to ten minutes and the number of cycles may depend upon the severity and advancement of the case. The use of the Buerger board helps materially in carrying out this procedure. Patients should be warned about trimming corns and callouses and these lesions on the feet should be viewed with suspicion for they frequently cover trophic ulcers and when treated should be treated with the strictest aseptic precautions.

SURGICAL TREATMENT

In the arteriosclerotic and embolic type of gangrene, without infection, it is best to be conservative. Nature may perform the amputation in the first instance and in the second, will help in the formation of collateral circulation or put down a line of demarcation which will give the surgeon his clue as to the location for his incision. In true diabetic gangrene, however, we have gangrene plus infection plus arteriosclerosis; in our attempt to save a leg we may sacrifice a life. By early operation we remove at once the source of infection, shorten the exhausting illness, and improve tolerance. The point of selection should be sufficiently high to guarantee a good blood supply, usually above the knee.

CONDITIONS PRIMARILY DUE TO INFECTION

Simple infections, either deep or superficial, because of their rapid spread and frequent involvement of the blood stream, may cause septicemia thus increasing the metabolism of the patient and making him a candidate for coma. Local areas of cellulitis, therefore, should be treated promptly in order that infection may be localized. It may be necessary to use large doses of insulin during this period but it is well to remember that immediately following the drainage, tolerance rapidly returns and hypoglycemic reactions may result if insulin dosage is not promptly reduced. Infections about the feet are particularly dangerous and none is so trivial that it should be ignored. It is well to remember that frequently under perforating ulcers, infected corns, and callouses, local areas of osteomyelitis may be present. X-rays should be made before a prognosis is given or operative interference is instituted.

CARBUNCLE

1.3% of our cases showed this complication. Carbuncle is one of the distinctive and serious lesions of diabetes. The absorption from the infected area under tension usually results in severe disturbances of the patient's diabetic balance. It is a localized lesion at first but unless treated metastatic abscesses or general septicemia may result. Hot applications may help to increase localization of infection and should be continued until the lesion begins to soften or discharge, operation is then indicated and an extensive crucial incision should be made. The use of the x-ray in the treatment of carbuncle undoubtedly hastens localization but the best results are obtained by its early use. We have used it in the treatment of two carbuncles with excellent results. Carbuncle and other lesions about the face, particularly those above the upper lip, although small, should be treated as serious surgical conditions for the absence of valves in facial veins and numerous connections between the skin and intracranial circulation, makes the possibility of developing a sinus thrombosis a serious one. One of our cases with gangrene of the ear and cellulitis extending over the temporal region rapidly developed this complication from which he died although his diabetic condition was under control.

CONCLUSIONS

1. Our statistics show that the diabetic death rate is increasing in Nebraska, that 60% of our diabetic patients are over forty years of age, that more women than men are treated for diabetics, and that more women die of the disease.

2. Diabetes, in many instances, is the penalty of obesity. Over 60% of our cases gave this history. Every diabetic, therefore, should be taught that under-nutrition prevents diabetes and is one of the most important principles in its treatment. The role of an hereditary history in the etiology has been stressed. Normal weight, or less, should be insisted upon, not only in every diabetic but in every relative of a diabetic.

3. The importance of gallbladder disease as an etiological factor has been shown. Every diabetic suffering from this complication should be relieved of his load.

4. Thyroid disease is dangerous to the diabetic by increasing metabolic demands and decreasing the efficiency of the insulin unit. Thyroidectomy cures the hyperthyroidism and helps the diabetes.

5. Coma deaths are needless and can be prevented if the patient has been properly instructed in its early symptoms. When it does develop, prompt, energetic treatment based upon sound, physiological principles may return many moribund patients to consciousness.

6. Arteriosclerosis manifests itself in a diabetic five years earlier than in a non-diabetic. For that reason, every patient above forty years of age should realize that gangrene is possible and should be taught the importance of methods of prevention. We, as physicians, must recognize these conditions early and institute prompt, fearless treatment.

7. The diabetic's life expectancy depends upon his intelligence and the thoroughness of his training combined with the diagnostic and therapeutic skill of his physician.

"EFFORT" THROMBOSIS OF THE SUBCLAVIAN VEIN IN THE PUERPERIUM*

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Although thrombosis and thrombo-phlebitis of the veins of the pelvis and lower extremities is fairly common during the first three weeks of the puerperium, thrombosis of the veins of the upper extremity is apparently very rare, as no case has been discovered in the literature.

CASE REPORT:

The patient was a white female, age 42. She had always been well until her first pregnancy in 1926 which was accompanied by eclampsia and resulted in the birth of a stillborn child. Following the termination of the pregnancy she developed a chronic nephritis, was under constant medical supervision and was advised not to become pregnant. She conceived, however, sometime in April, 1931, as her menses ceased at that time. From that time until her admission to the hospital she had a blood pressure of usually 140/80 to 150/90 and an albuminuria of 2 to 4+ with an occasional cast. She was admitted to the Lutheran hospital, January 16, 1932, and was under intensive anti-toxemia treatment until January 23, 1932, at which time a classical cesarean section, under spinal anesthesia was performed. Salpingotomy was advised but refused. She was delivered of a normal female child weighing six pounds. Her convalescence was uneventful except for a gradual fall of blood pressure to 120/80 with diminution but not actual disappearance of the albuminuria. The wound healed by primary intention. The highest post-operative temperature was 100° F. on the eighth day; and prior to her dismissal on February 4, 1932, the thirteenth day post operative, the temperature had been normal for three days.

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On the day following her dismissal from the hospital she first noticed a feeling as if she were unable to swallow. She next noticed a swelling on the left side of the neck above the clavicle which spread to the left shoulder. This was accompanied by pain around the shoulder, rather dull and persisting in character, but at no time was it sharp, and it was made more severe on any attempt to move her left arm or shoulder. She then noticed that she was unable to move her left arm and also was aware of the fact that all of the veins on the back of her left hand were distended and full.

On examination the same evening considerable swelling and cyanotic discoloration was noted above the left clavicle, and over the supra-clavicular fossa. There was considerable discoloration and distension of veins in the axilla, along the course of the long thoracic vessels, and some swelling and discoloration around the left shoulder and upper part of the left arm. The veins of the left upper extremity down to those over the dorsum of hand were markedly distended. Palpation of the axilla was impossible because of severe pain. The pulse was very rapid, 146, and weak. The heart sounds were those of a heart beating against a rather high back pressure such as is heard in case of a pulmonary thrombosis. The temperature was slightly elevated, 99.6 F. The swelling gradually descended down the left arm and forearm until on February 7, 1932, the entire shoulder region, arm, forearm and hand were edematous and cyanotic in hue. She was unable to move the hand, forearm or arm. The pulse continued to range between 120 and 140, and the temperature up to 99.6 F. On February 12, 1932, the pulse was slower, around 100, and the patient felt much better. The swelling was about the same, the pain almost gone, but she was unable to move the extremity. The veins, superficial, were not as distended. The edema and cyanosis then gradually disappeared, beginning about February 24, 1932, until March 13, 1932, about five weeks after onset, at which time she was able to move the extremity somewhat, and she was allowed to get out of bed. When she got out of bed and was up the edema and cyanosis returned somewhat.

The swelling and cyanosis of the arm, forearm and hand when the patient was up and around continued for another month. The cyanosis disappeared about this time but the swelling persisted until the middle of September. An examination done in May, 1932, showed some firmness of the tissues of the shoulder area, upper forearm and chest, particularly over the pectoralis major.

Between May, 1932, and February, 1933, the patient was able to do her own house work without difficulty. She noticed that the arm tired easily at first but that as time continued this symptom has slowly disappeared. Her general health was good.

On February 23, 1933, an examination showed that there was fullness of the supra and infra-clavicular fossae on the left as compared with the right. The left shoulder seemed slightly more prominent and the left upper arm was definitely larger than the right, the biceps measurement being 9.25 inches on the left and 8.5 inches on the right. The superficial veins of the medial surface of the left arm were more prominent than those of the right arm. There was no edema of the forearm or hand. There was no limitation of motion in the shoulder and no fullness or tenderness in the axilla.

The blood pressure was 110/60. An examination of the urine revealed an acid reaction, a specific gravity of 1.010, no sugar, one plus albumen and on microscopic examination no casts were seen.

A radiographic examination of the cervical spine was done February 23, 1933, by Dr. J. S. McAvin.

"Study made of the cervical and the upper three dorsal segments demonstrates an area of calcification in the parenchyma of the right apex in the second posterior interspace, this area measures 8 by 12 mm. There is also some thickening of the apical pleura on both sides. There are no changes of contour or alignment of the cervical segments, but the seventh cervical has a long transverse process measuring 2 cm. in length, simulating a rudimentary cervical rib."

ETIOLOGY

Thrombosis of the subclavian and axillary veins subsequent to effort has been recognized for a number of years. According to Lenormant and Mondor, and Lohr the first report was by von Schotter in 1884. No further cases appeared in the literature until 1911 when Scheppelmann and Heinecke both reported cases. Since that time there have been about 60 more cases reported in the medical literature of the world. They present such a uniform picture that the recognition of a thrombosis of the veins of the upper extremities following unaccustomed but often trivial effort seems justified.

The effort which produces such a lesion seems to be a repeated or prolonged exertion and one to which the patient is apparently unaccustomed. By the exertion a sort of chronic or rather repeated trauma is applied to the vein or surrounding muscles, indirectly, however, and differs from the acute trauma incident to contusions or fractures.

The disease is more common in the male than in the female and more common on the right than on the left side. The majority of the cases have appeared in members of the working class; in those called upon to perform some duty with which they are muscularly unfamiliar. The performance of this duty entails certain movements of the arm—namely, marked abduction or extension of the arm, with probably lateral rotation, Callander's cases sustained lesions following prolonged hammering with the arm above the head in the first case and continuous pulling at a wire cable in the second case. Swindt's case was a young man who worked at "pulling tents" with a citrus "fumigating gang"; Lenormant's patient worked at plastering a ceiling for a week; Mondor's patient lifted a heavy box of refuse; Lowenstein's in a woman lifting trays and Firth and Mackay's in a young girl who stirred a heavy pudding.

In every one of these above instances abduction or extension of the arm with lateral rotation occur.

Lowenstein, in an effort to determine the anatomic changes that occur around the axillary and subclavian veins during the above group of movements made dissections in 30 cadavers and sagittal sections in 6 others. In conclusion he stated: "It would seem therefore that the etiology of thrombosis produced by extension has a two fold basis; first ensues a venous stasis or circulation slowing produced by forced expiration that characterizes effort. This stasis is clearly manifested in the head and neck by cyanosis of the face and swelling of the jugulars. Seçondly, marked abduction or extension of the arm, probably with lateral rotation produces a pronounced pressure by the costocaracoid ligament on the axillary vein. with resultant changes in the vascular endothelium sufficient to cause a thrombosis." Lowenstein's demonstration satisfies the first two of the three factors that form the basis of the mechanical theory of thrombosis: (1) changes in the blood flow; (2) changes in the vessel wall; and (3) changes in the blood elements. These factors may occur without infection. If the damage to the vessel wall results in the agglutination of the blood platelets then the third factor is also satisfied.

Von Schotter, in his original paper, suggested that due to the unusual strain of muscle pull there occurred a stretching of the vein wall with resultant damage to the wall. Gould and Patey believe that the pressure of the subclavius muscle on the vein causes a distention of the vein and then a rupture of the delicate subclavio-axillary valves, the predisposing factors being those mentioned above—unaccustomed exercise with an abducted position of the arm.

Another explanation is found in effort resulting in muscle fibre rupture with its subsequent hemorrhage and venous stasis from pressure on the vein. Such a patient was reported by Moure and Martin in a young electrician who following an alcoholic debauch and resulting restless night developed edema of the right arm extending from the axilla to the fingers and a painful swelling along the course of the axillary vein. Because of failure to improve following one month of conservative treatment an operation was performed. At the operation all vessels were normal but surrounding them was an ancient extravasation of blood. They believe that during the restless night there was a contusion which resulted in a rupture of a small blood vessel and lymphatic trunks and the resulting extravasation of blood and interruption of lymph flow caused the edema. In other words a condition similar to that following breast amputation and axillary dissection. Following operation the condition improved and the arm returned to normal.

Many investigators still believe that infection plays a most important role in the etiology of thrombosis—secondary to effort, and believe that the lesion is to be explained on the basis of a latent thrombophlebitis of bacterial origin. Most of the cases of this "effort" thrombosis have not been initiated by a chill, their course has not been attended by fever and there have been little or no evidences of infection in many cases. Mondor however, reported a case with a morning temperature of 36°8 and an evening temperature of 35°8 C. He operated upon his patient because of progressing thrombosis. Culture of the blood clot was done and a staphylococcus albus and colon bacillus were obtained. Histological examination of the vein wall showed nests of staphylococci in the vasa vasorum. Grimault and Dantho obtained staphylococcus albus and streptococcus viridens. Chifolicu and Folliasson also obtained the streptococcus on culture of the clot. Mondor believes very strongly that these thromboses brought about by effort really have their explanation in a latent thrombophlebitis of bacterial origin—the effort aggravating the latient infection and resulting in a very short time after the effort in a clinical thrombosis of the vessel involved. A callus, enlarged lymph gland, intrathoracic tumors or strumous conditions may cause a pressure upon the axillary or subclavian vein and result in blockage of the vein with a subsequent picture resembling thrombosis (Lohr). Anaemias, leukaemia, polycythaemia, infectious diseases, toxemias, burns and exposure to cold must be ruled out also.

It seems, therefore, that although all schools believe that effort is the exciting factor the predisposing factor is different: (1) anatomical peculiarities, (2) muscle rupture, (3) latent infections. Certain other predisposing factors may be present and play a small part, such conditions as intrathoracic tumors, cervical ribs, tuberculosis, syphilis, chronic nephritis, acute infections.

DIAGNOSIS

A typical case is characterized by Lowenstein as follows: "Following slight or marked exertion but without direct injury to the vein, there is progressive swelling of the arm with pain usually referred to the axilla. With the increase of edema there are evidences collateral circulation, and cyanosis is of frequent occurrence, although pallor may be present. Palpation of the axilla reveals a hard indurated cord sensitive to pressure. The development of these phenomena usually occurs without fever, and is succeeded by a period of rapid or more often tardy regression."

TREATMENT

The treatment in the majority of cases should be paliative, rest with elevation of the arm with later massage and motion to encourage colateral circulation. Prior to 1927 all authors advised against operation as incision to remove the clot does not prevent the reformation of the thrombosis, and excision of the vein does not restore circulation and both invite embolism. Lenormant and Mondor are cautious about advising surgical intervention but operated successfully one of their two cases. They conclude, "The number of operated cases—ten in all—is too small to permit one to state and fix the rules of intervention."

Lohr advises operation in those cases in which the diagnosis is not clear to rule out compression of the vein by surrounding pathology.

PROGNOSIS

The prognosis as to life is good—but as to restoration of function only fair. In most of the cases the arm is useful in from two to three months but there remains a certain amount of weakness due to chronic edema which constitutes a disability. Some cases, according to Lohr, even after a considerable period of time, show tiredness, muscle weakness and mild pain resembling intermittent venous claudication after strenuous exercise.

DISCUSSION OF THE CASE PRESENTED

In searching for a cause of the thrombosis in the case reported we feel that it cannot be a direct sequel of the operation per se—for it occurred fourteen days subsequent to the operative procedure and there was no abduction or extension with lateral rotation of the arm during the operation. The patient, however, like most patients confined to bed, helped lift herself up in bed by holding on to the rods at the head of the bed. Such a maneuvre would of necessity entail abduction, extension and probably lateral rotation. This is a possible explanation.

The mild febrile postoperative makes us hesitate to lay the cause of this complication in this case to infection, although some might argue that the infection was latent and was manifest on the eighth postoperative day when the temperature registered 100° F.

The case, however, because of the persistent swelling of the upper arm and shoulder resembles the case of Moure and Martin. She might have ruptured some muscle fibres and the resulting hemorrhage obstructed the vein from pressure. On absorption of the hemorrhage, the pressure of the vein was released and circulation once more established.

We feel that the case is one of thrombosis subsequent to effort—that the effort caused a rupture of venous intima with a resulting intravenous thrombosis. Possibly the patient's chronic nephritis, and prominent transverse cervical process played some role in the causation of the thrombosis.

In conclusion—if the exciting factor was the trivial effort of lifting herself up in bed by holding on to the upper head rods, should we not be on the watch for another instance? Should we as a prophylactic measure forbid patient's performing such a "feat"?

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ADVANTAGES OF WEAK HEAVILY FILTERED RADIUM NEEDLES

Charles L. Martin, Dallas, Texas (*Journal A. M. A.*, Nov. 5, 1932), believes that modern developments in radium therapy are based on two facts: first, that radiation of great penetrating power and short wavelength has less necrotizing effect and a greater selectivity for radio-sensitive cells than radiation of low penetration and long wavelength, and, second, that the selectivity of radiant energy for radiosensitive cells is increased when the duration of the exposure is increased with a corresponding decrease in intensity. The implantation of multiple heavily filtered radium needles of low strength over long periods of time increases the margin of safety for normal tissue and causes the rapid regression of malignant tumors of a relatively high grade of radio-resistance without sloughing.

NEUROLOGIC PROBLEMS IN TRAUMATIC CEREBRAL LESIONS*

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The increasing number of deaths from automobile accidents is apparent to all. A few figures from the National Safety Council illustrates this. In 1926 there were 23,000 automobile accident deaths from 700,000 total accidents, while in 1928 there were 27,500 deaths in the United States. In 1931 there were 31,000 automobile accident deaths. The present rate is undoubtedly higher. A large percentage of these deaths has been due to cerebral injury. Thus head trauma looms as a problem of major importance to all branches of the medical profession.

The general practitioner is practically always the first to examine an acute traumatic patient. He must necessarily have a practical knowledge of the proper management of the case. In the large percentage of cases his judgment alone should be sufficient. His responsibility to his patient requires up-to-date knowledge in order that the proper treatment may be administered. He should be prepared to recognize when a case is a surgical problem and understand danger signs before serious consequences result. He needs to be sufficient of a neurologist to recognize common localizing symptoms or if in doubt to know when a neurologic opinion may be of help to him.

The general surgeon who is a student of neurologic surgery or the neurosurgeon has a very important role in the picture of traumatic cerebral disease. At present the surgeon must accept the modern view that the majority of cerebral injuries are non-surgical and respond better to medical therapy. On the other hand he alone in certain cases can save the patient's life and in no field of surgery is more accurate scientific surgical judgment needed than in acute brain surgical problems. The problem usually is the proper management of cerebral edema and hemorrhage.

The neurologist, in the management of acute and chronic cerebral traumatic lesions has a part midway between the surgeon and general practitioner. His part is usually one of consultation to help in decisions of questionable surgical interference or to aid in diagnostic localization of surgical lesions; also to give prognostic opinion in medico-legal cases and at times to treat post traumatic neurosis and organic defects. The neurologic aspect in the acute cases is entirely concerned with the extent and degree of damage to the brain and not to the cranium.

The important symptoms at first involve the general condition of the patient, particularly the degree of shock, the depth of disturbance in consciousness and the degree of medullary center involvement. Later focal signs are important and need careful interpretation because they are often transient, due to cerebral edema, irritative not paralytic. The only need for hasty surgery with these signs is evidence of hemorrhage from large vessels. Operative procedures should only be rushed into when one is sure of the indication.

In order to present some of these head injury problems more concretely, the following classification modified from Dowman's has been found helpful:

1. Massive Cerebral Injury With Early Medullary Paralysis. (Hopeless case, surgery contraindicated, early death).
2. Middle Meningeal Hemorrhage. a. Transient coma, spreading unilateral paresis with secondary coma and progressive increase in B. P. b. Immediate surgery upon diagnosis, external carotid ligation and subtemporal decompression.
3. Simple or Compound, Depressed Fracture With Localized Brain Contusion. a. Treatment of shock and cerebral compression by dehydration. b. Dibridement indicated with removal of contused brain, spicules of bone and clots.
4. Increased Intracranial Pressure Without Medullary Paralysis. a. Dehydration therapy first, spinal drainage. b. With progressive pressure signs, subtemporal decompression.
5. Brain Injury Without Acutely Increased Intracranial Pressure. a. This type always responds to dehydration therapy. b. Maybe concussion without skull fracture or linear fracture of vault with mild cerebral edema, mild encephalitis, low grade pressure, often residual symptoms.
6. Mild Depressed Fracture. Dehydration indicated and surgery if evidence of depression producing brain trauma.
7. Acute Traumatic Encephalitis. a. Acute cerebral edema with multiple punctate hemorrhages, mental symptoms, cranial nerve palsies, bilateral findings but no focal signs. b. Treatment, dehydration unless focal signs.

In the above classification the extent of cerebral injury is the criterion followed. Many individuals have serious cerebral defect following slight injury while others may suffer large cerebral lesions without neurologic disturbance. Skull fractures alone do not convey the true significance. The intracranial complications are the major problems. These are four in number: (1) cerebral edema. (2) hemorrhage. (3) laceration of brain tissue, (4) infection primary and secondary.

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1. Cerebral edema: Varying degrees of cerebral edema are present with all cranial injuries. There is either hypersecretion or hypoexcretion of cerebrospinal fluid from partial fluid blockage. The cerebrospinal fluid passes from the subarachnoid spaces through perivascular channels into capillaries and veins by osmotic action. A constant balance between the rate of secretion and absorption is normal. Following cerebral contusion this balance is disturbed and we have resultant wet brain or edema. In certain cases pre-existing toxic factors may be present. Alcoholics, nephritics or arteriosclerotic individuals are poor risks with head trauma largely because of a predisposition to acute cerebral edema.

The existence of cerebral edema is easily determined. By means of the spinal manometer the exact degree of cerebral compression can be obtained. In cerebral compression below 20 mm. of mercury pressure this is practically our sole guide. Above 20 mm. of mercury ophthalmoscopic examination may help but optic disk blurring or actual choked disks are late signs. Frequent blood pressure determinations are the second best guide to cerebral compression from edema and hemorrhage. A rising blood pressure usually associated with slow pulse indicates increasing brain compression and is a warning of impending medullary collapse. Whenever high intracranial tension persists in spite of treatment it is probable that hematoma formation exists.

Treatment of cerebral edema: The old empiric treatment of acute cerebral trauma consisted of rest, morphine and magnesium sulphate. Mild cases responded but the physiologic mechanisms were not understood until Weed and McKibbin demonstrated that brain volume and cerebrospinal fluid pressure were reduced by hypertonic solutions. We since have learned much about the physiology of cerebrospinal fluid pressure and the pharmacodynamics of different hypertonic solutions.

The cerebrospinal fluid pressure is independent of and normally lower than the arterial blood pressure and slightly above the cranial venous sinus pressure. While cerebrospinal fluid pressure may be reduced to zero, yet the blood pressure will be unchanged and the venous pressure fall but slightly.

Hypertonic fluids: There are four that have been used: (a) Hypertonic chloride, (b) Ringer's solutions, (c) magnesium sulphate, (d) glucose. Hypertonic chlorides at times may be toxic. At first there is a slight rise in intracranial pressure at the end of a salt injection, then cerebrospinal fluid pressure declines and reaches its maximum fall 25 to 35 minutes after injection, with a slow return to normal and goes above normal at the end. Magnesium sulphate has the same objections as salt when given intravenously. When given by mouth the fluid intake must be kept minimal. Saturated solutions by mouth or as retention enemata are of value after the shock stage. During the shock stage with low temperature, weak, fast pulse and severe fluid loss from bleeding and vomiting, dehydration by these means is contraindicated. Ringer's solution and glucose do not have toxic effects or upset the salt balance of blood serum. Hypertonic glucose is the most practical because besides relieving medullary pressure it is of value in acidosis and shock. With its use the fall in pressure is more gradual and prolonged, with no terminal rise in pressure after eight hours. With Ringer's there is a normal return within 3½ hours but it has a quicker prompt action and is thus of value during an operation where prompt action is desirable, although to avoid the terminal rise and to obtain prolonged action Ringer's solutions should be followed by glucose injections.

Spinal drainage is often of value in cerebral edema but should be used with caution in cases where there is a rapidly developing intracranial compression. The danger of inducing cerebellar herniation is always present. The patient should be studied carefully before this treatment is instituted. The reducing of pressure should be done slowly and only to about half its original level. Any sudden drop in pressure usually indicates cerebellar herniation into foramen magnum. Spinal drainage must then be stopped.

2. Intracranial hemorrhage: The locations of hemorrhage are extradural, subdural, subarachnoid or intracerebral. Extradural rupture usually arises from a branch of the middle meningeal and produces focal signs. Vessel ligation and removal of the clot are indicated. Subdural hemorrhage is also usually from middle meningeal rupture. The typical case is characterized by an early short period of coma leading to recovery, followed by spreading unilateral hemiparesis with secondary coma and rising blood pressure. Unless the blood pressure readings are taken frequently this sign may be missed. At times the rise of blood pressure is not present. This picture always indicates immediate surgery. Chronic subdural hematoma may be overlooked and later on residual intracranial pressure or tumor symptoms lead to the diagnosis. Large numbers of autopsies(1) in skull fractures have disclosed the fact that over 50 per cent of subdural and extra

dural hematomata are not recognized clinically. This means that traumatic cerebral hematomata are more frequent than generally believed. Subarachnoid hemorrhage may be either from ruptured meningeal vessels through the arachnoid membrane or from pial capillary hemorrhage. This diagnosis is made by finding bloody spinal fluid upon lumbar puncture. In acute hemorrhage spinal drainage should be tried along with dehydration therapy. Bagley(2) has shown that blood in the subarachnoid space alone leads to pathologic alterations in the brain and should be removed as far as possible. If the hemorrhage continues surgical ligation must be carried out.

3. Laceration and contusion of brain tissue: This problem is surgical and usually accompanies depressed comminuted skull fractures. Here debridement operation is indicated. This may or may not be a serious neurologic problem, depending upon the location of the laceration. Large brain extrusions in frontal regions may be symptomless while small lacerated areas near such vital centers as the speech centers may leave serious mental or aphasic defects. An illustrative case follows:

Case 1. Mr. C. J. L., age 29, was first seen in consultation with Dr. J. A. Weinberg on July 7, 1931. The patient, about one hour before, had received a crushing injury to the top of the skull. The patient was conscious, vomiting bright red blood. There was an extensive depressed area about 2x3 inches over the right frontal lobe. Extensive ecchymoses in both eyelids had swollen the eyelids shut. The pulse was 50, the blood pressure 158 systolic 90 diastolic. A right lateral head x-ray of the skull showed an extensive depressed comminuted fracture of the right frontal bone with considerable fragmentation of the bone in the center of the depressed area. The right pupil was dilated and the disk margins were hazy in outline, otherwise the neurologic examination was negative for any focal signs.

The increased blood pressure, slow pulse, blurring of the optic disks all indicated seriously rising increased intracranial pressure. The x-ray and clinical examination indicated laceration of dura and brain tissue. Operative interference was clearly indicated. Dr. Weinberg performed a decompression and debridement operation of the depressed area, the spicules of bone and the lacerated areas of brain tissue were removed. The dural tears were repaired. Dehydration therapy in the form of hypertonic intravenous glucose and magnesium sulphate by mouth followed the operation. The patient made an excellent post-operative recovery without any residual defects.

COMMENT

This patient represents a definite type of skull fracture in which surgery is indicated and illustrates the fact that an apparently serious extensive injury to the brain may leave no serious residual defect because the injury is in a more or less silent area.

4. Infection, primary or secondary: This need not be discussed in detail since the problem is aseptic and antiseptic prevention of secondary meningitis. Fractures at the base through the middle fossa into the cribiform plate with resultant cerebrospinal rhinorrhoea are especially prone to the development of meningitis. After the development of meningitis the management is solely that of secondary meningitis.

Traumatic encephalitis. Certain acute cases of head injury with or without skull fracture show diffuse neurologic signs without localization, often mental symptoms that are not entirely attributable to cerebral edema. These conditions are probably the result of multiple punctate hemorrhages throughout the brain tissue and are called traumatic encephalitis.

We see another large group of patients who have suffered from so-called concussion which has been presumed to be an essentially transient state without producing evidence of structural damage to the nervous system. Still these patients continue to complain for long periods of numerous symptoms such as headache, vertigo, tinnitus, disturbance of sleep, inability to concentrate, nervousness, etc. These patients have usually been classified as post traumatic neuroses. More recent study of these patients has shown their reactions to be similar to those seen following acute encephalitis.

In cases where necropsy studies(3) have been possible, death resulting from some other cause than the concussion, actual cerebral injury in the form of minute hemorrhages has been shown. There is also strong evidence that secondary degenerative changes may develop. Many of these patients who continue to complain even without objective symptoms following acute concussion are probably better considered as traumatic encephalitis cases.(4)

In these cases encephalographic studies should be recommended, first as a diagnostic procedure to determine the extent of cerebral pathology and second as a therapeutic aid. Frazier, Penfield and others who have done large numbers of encephalograms in post traumatic cases report a percentage of their patients being relieved of severe symptoms such as headache, tinnitus, vertigo, epilepsy, etc., by the air injection.(4)

The general profession is still slow to recognize the tremendous advance in intracranial diagnoses brought about as a result of cerebral visualization by this method. This procedure should be in more general use as it removes much of the guess work in clinical neurology. With the increasing knowledge obtained from encephalography we are able to visualize accurately any cortical defect or residual conditions such as arachnoiditis, obstruction to cerebrospinal fluid pathways, hydrocephalus, cortical atrophy, etc. This procedure has been of extreme value in certain medico legal cases where the question of extent of cerebral damage is present. It gives accurate information not obtainable in any other way.

The following three cases illustrate some unusual complications of the so-called acute cerebral concussions.

Case 2. Mrs. B. P., age 45, was knocked down by a car on June 18, 1931. The patient was semi-conscious for about 24 hours, vomited a number of times and had severe headaches. When examined about 36 hours after the accident the neurologic examination showed no evidence of focal disease. The spinal fluid pressure and serology were normal. Head x-rays were negative for any definite skull fracture.

The patient remained in the hospital 12 days. During this time the patient continued to suffer from severe headache and acute attacks of vertigo whenever the head was moved.

The diagnosis in the case was acute cerebral concussion without skull fracture, possibly a diffuse traumatic encephalitis.

The attacks of vertigo gradually disappeared but she continued to suffer from constant headache, insomnia and general nervousness. The patient never presented the picture of a neurotic but appeared to suffer a great deal. Encephalography was advised as a therapeutic measure and on November 1, 1931, the patient underwent this operation. About 125 cc. of cerebrospinal fluid was removed and a slightly less amount of air injected. The patient withstood the procedure without unusual reaction. About two weeks following the operation the headaches disappeared entirely and she was able to sleep normally. She gained 5 lbs. in weight and declared herself entirely free from symptoms and ready to return to work. It is interesting that a law suit is still pending with no settlement offered and as far as can be determined there has been no psychic factor in her complete recovery.

COMMENT

This patient represents the type in the outline of brain injury without acutely increased intracranial pressure. the commonly called concussion case that might better be considered a mild traumatic encephalitis. This type of patient often continues to suffer from disabling symptoms that are erroneously considered to be psychoneurotic in character because of the absence of organic signs and the general nervous reaction that they show. This case is an excellent example of beneficial results often obtained by air injection in the relief of the post traumatic head complaints.

Case 3. Mr. E. R. F., age 30, on February 4, 1930, was slugged over the left ear by a robber. He remained unconscious about 9 hours. Upon regaining consciousness the patient suffered severe headache and nausea for several days but did not vomit. He was observed in a hospital during this period with no special treatment administered. Head x-rays were negative for any evidence of skull fracture. From the onset of consciousness the patient noticed deafness which gradually became complete within a month's time. Neurologic examination after the deafness was established was negative except for the bilateral nerve deafness.

A diagnosis of acute cerebral concussion with residual double 8th nerve deafness was made. Encephalography for diagnostic and possible therapeutic purposes was recommended. The studies showed widening of the cortical markings indicating a moderate degree of atrophy in the parietal and frontal regions with no hydrocephalus. The deafness was not benefited by the procedure.

COMMENT

This case is presented because of its unusual features, namely a double eighth nerve deafness probably the result of multiple punctate hemorrhages into the nerve nuclei or acute cerebral edema producing a compression neuritis. One wonders whether a simple spinal drainage at the time of the acute headache or even dehydration therapy might not have relieved the condition and prevented the serious sequel of deafness. The findings of moderate cortical atrophy upon encephalogram indicate the diffuse nature of the pathology and this patient could be classified logically as a case of traumatic encephalitis. The case also indicates that one cannot expect recovery from definite organic pathology by the air injection.

Case 4. Mr. W. C. K., age 29, was struck unconscious by a car on October 30, 1930. He remained unconscious about 12 hours. Head x-rays were negative for skull fracture and no focal signs were elicited or shown on the hospital record. The patient left the hospital within 3 days. A diagnosis of cerebral concussion was made.

The patient remained at home about 10 days suffering from headaches. He returned to work but continued to report to the company physician from time to time on account of headache.

On February 9, 1931 (over 90 days after the injury), after a long period of work the patient suffered increasingly severe headache. On February 11, slight fever was noted and on February 13, the patient went to bed on account of intense stabbing, frontal pain and was delirious. When examined at this time a fever of 102 degrees was present, the patient was suffering intense pain and irritation. The retinal vessels appeared tortuous and congested on both sides. Neck rigidity and double Kernig were present but the neurologic examination was otherwise negative. Upon removal of the patient to the hospital the spinal fluid was found to be under 20 mm. of mercury pressure. A drainage relieved the headache, the fluid was clear but showed 20 cells per cmm. During the 10 day stay in the hospital spinal drainage was carried out almost daily and dehydration therapy in the form of intravenous hypertonic glucose and magnesium sulphate by mouth. The patient became symptom free and after a month's rest felt strong and returned to work and has remained well. A diagnosis of acute cerebrospinal fluid blockage secondary to previous acute cerebral concussion was made.

COMMENT

This case is presented because of its many interesting features. It illustrates an unusual condition of delayed increased intracranial pressure symptoms over 90 days following the acute head trauma which appeared trivial at first. The picture at first was indistinguishable from an acute meningitis until the spinal fluid was studied. The story of the cerebral injury was almost overlooked in the history. The case also illustrates the therapeutic value of dehydration and spinal drainage. Encephalographic studies should be carried out to determine exactly the type of pathology present. The patient did not wish to undergo the operation because his recovery was so complete.

Head injury occuring in individuals with preexisting cerebral pathology often leads to serious results. Arteriosclerotic, alcoholic, syphilitic or individuals having a latent cerebral neoplasm may develop profound symptoms after an apparently trivial head injury. The following case illustrates this fact:

Case 5. Mr. R. C. W., age 47, was in normal good health until December 17, 1932, when he bumped his forehead into a 5-inch iron pipe while walking in a dark basement. The blow stunned him but did not knock him down. Headache and neckache continued all that day but he did not leave work. The patient returned to work the next day but was taken home on account of forceful vomiting. Severe head pains radiating from the left frontal region back to the occiput continued from the onset. Vomiting spells accompanying the headache occurred at times with spells of mental confusion and some numbness and awkwardness of the right hand and leg.

Examination on February 14, 1933, revealed the following: Sluggish physical and mental reactions, with poor memory and ability to calculate. Blood pressure 148 systolic, 100 diastolic. Local tenderness over the left frontal area, and marked increase in head pain upon compression either jugular vein. The right pupil was larger than the left and both reacted slowly to light, with bilateral nasal blurring of the optic disks. The remainder of the neurologic examination was essentially normal. The cisternal pressure was 12 mm. of mercury, the fluid was slightly yellow in color but all constituents of the fluid were normal.

The symptoms and findings were suggestive of a possible traumatic subarachnoidal hemorrhage with latent hematoma. The patient was hospitalized for encephalographic x-ray studies. Stereoscopic plates showed no evidence of skull fracture. The encephalographic studies showed symmetrical dilation of both lateral ventricles to six to eight times normal size. There was suggestive encroachment into the floor of the lateral ventricles with slight lateral displacement of the posterior half of the frontal horns, with some delay in filling of the right lateral ventricle. There was very little air over the left cortex and practically no air over the right cortex. There was apparently no subarachnoidal pathology.

About six hours after the encephalography the patient suddenly developed medullary paralysis and died. At necropsy the subarachnoidal spaces were about normal. In the region of the roof of the third ventricle practically in the midline was a rather large soft gliomatous tumor with old hemorrhage into the tumor and a recent intraventricular hemorrhage. The ventricles were dilated and there appeared to have been ball valve intermittent obstruction of the cerebral aqueduct from the tumor. There was considerable cerebral edema and herniation of the cerebellum into the foramen magnum.

COMMENT

This case was a compensation medico-legal problem. It presents a difficult problem of interpretation of pathology in head injury. Undoubtedly the neoplasm existed prior to the head injury, but was apparently symptomless until the injury. The head injury probably produced a hemorrhage within the tumor that started the acute intracranial pressure syndrome that simulated subarachnoidal hemorrhage or hematoma. The immediate cause of death was intraventricular hemorrhage probably hastened by the air injection. We should keep in mind the possibility of minor head trauma producing serious symptoms in cases that have latent cerebral pathology. In brain tumor particularly it takes but little to upset the balance between normal and abnormal within the cranial cavity.

SUMMARY

1. The importance of the role of the general practitioner, neurosurgeon and neurologist in the management of traumatic cerebral lesions has been stressed.

2. A classification of head injuries as to the extent of cerebral damage and therapeutic indications has been presented.

3. The management of the four major complications of head injuries, namely: (1) Cerebral edema, (2) hemorrhage, (3) laceration of brain tissue, and (4) infection was discussed.

4. Five cases illustrating certain important features of acute cerebral trauma were presented. Traumatic encephalitis or so-called acute cerebral concussion was discussed. The importance of more wide spread use of the highly valuable procedure encephalography was emphasized both for diagnostic and therapeutic purposes.

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A COMPARATIVE STUDY OF COMPLICATIONS IN ETHER AND SPINAL ANESTHESIA*

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Spinal anesthesia has come into almost universal practice. One can find large series of cases reported in the literature with studies as to the effect of this anesthetic. Numerous reports deal with its various complications. It occurred to me, however, that the proper way to evaluate the good or bad results of spinal anesthesia was to compare its complications with those of the commonest general anesthetic in general use, namely ether. I therefore started a preliminary detailed study of complications that have arisen in my personal spinal anesthetic experience, with a similar consecutive group of ether anesthesias carried out in the Lutheran Hospital. I am reporting the facts brought out thus far in my study and am giving this as a preliminary report with the hope of carrying the investigation into a much larger series of cases.

Complications of anesthesia may include any untoward reactions manifested by the patient from the beginning of administration of the anesthetic until termination of treatment for the condition for which the patient was anesthetized. In other words, a complication may manifest itself within a few seconds after the anesthetic is begun, or it may cause disability or death weeks or months later. Therefore, when any incident occurs which interrupts the patient's convalescence, the etiology of which cannot be accounted for, the surgeon should attempt to determine, if possible, the role played by the anesthetic in causing such complications.

Furthermore he should attempt to determine whether that particular complication would have occurred had a different anesthetic been employed. If he fails to give this problem serious consideration at the time of its occurrence he will encounter a repetition of his error when confronted with similar conditions.

In an attempt to avoid such repetition of errors or complications the following clinical study was carried out. A detailed study of 300 cases was made. The 150 ether cases here reported are those of the various Lutheran Hospital staff surgeons and run consecutively to January 1st, 1933, but include only major surgery, as follows: Upper abdominal 24, lower abdominal 95, perineal and lower extremities 21, above diaphragm 10. The spinal group includes only my own cases and runs consecutively to January 1st, 1933. I am not reporting spinal anesthesias done by others because I wanted to compare my own spinal anesthetic complications with the known complications of ether; also because a uniform tecnique and anesthetic agent is not used by all surgeons. All progress notes were made by staff physicians or graduate nurses. This tends toward uniformity of observations and accuracy for a comparative study.

In the spinal group there were no operative or preoperative complications except in three cases, as follows:

In the first case, a gastroenterostomy, 15 minutes after the injection of 150 mgms. of neocaine only mild anesthesia was noted, so a general anesthesia of ether was given.

The second case, a perineal operation, a perfect anesthesia followed the injection of 150 mgms. of neocaine for thirty minutes, sensation then returned and we were obliged to finish the operation under ether anesthesia.

The third case, preliminary to a cholecystectomy in a man of 68 years old, within one minute after administration of neocaine developed an ashen pallor, became dyspnoeic, anxious and vomited. His condition remained unchanged for six or seven minutes then the patients condition improved except for the pallor.

In this entire series only neocaine was used. The maximum dose for adults was 150 mgms. For all others 100 mgms. was used.

In the ether group there were no operative or preoperative complications recorded.

Each chart of the three hundred cases was reviewed carefully and a tabulation made of findings as follows: Diagnosis, operation, age, sex, post-operative temperature, pulse and respiration and the number of hours post-operative that the maximum of these were reached, the dosage of morphine given, the incidence of gas pains, post-operative vomiting, the length and comfort of the convalescence, unusual complications and the number of deaths were all investigated in the attempt to study comparative effects of spinal neocaine and ether anesthesia.

TABLE NO. I.
COMPARATIVE OPERATIONS

	Upper Abdomen	Lower Abdomen	Perineum Lower Extremities	Above Diaphragm
Ether	24	95	21	10
Spinal	19	106	25	0

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*Presented before the Omaha-Douglas County Medical Society, February 28, 1933.

Table No. I shows the similarity of operative procedures under both types of anesthesia except that ten operations above the diaphragm were done with ether and none with spinal.

TABLE NO. II.
POST OPERATIVE FEBRILE COMPLICATIONS

	ETHER		SPINAL	
Temperature	No. Cases	P.O.Hours	No. Cases	P.O.Hrs.
To 99.6	17	23	22	15
To 100.6	57	33	65	21
To 102	60	34	57	24
To 102+	16	37	6	25

Table No. II reveals the averages of the post-operative febrile reactions in four groups arbitrarily chosen as follows: First, fever up to 99.6; second, fever from 99.6 to 100.6; third, fever from 100.6 to 102; fourth, fever above 102. In each group it was noted that the maximum febrile reaction was reached in the spinal anesthesia approximately ten hours earlier than from ether anesthesia.

In the first two groups, namely those with lesser febrile reactions, there were sixteen more cases in spinal anesthetic group, with a correspondingly greater number of ether anesthesia in the last two groups. There were sixteen ether cases as compared with only six spinal anesthesia that had a temperature of over 102. It was also observed in this study that as a general rule the ether cases had a longer sustained febrile reaction.

While no definite explanation can be given for the greater febrile reaction following ether anesthesia, it seems probable that the systemic toxic effects of ether producing bronchitis, mild toxic nephritis, blood changes, etc., are responsible for greater febrile reaction than in spinal anesthesia.

TABLE NO. III.
POST OPERATIVE COMPLICATIONS

Complications	Ether	Spinal
Complications	Ether	Spinal
Headaches	12	25
Catheterized	14	23
Pneumonia	1	1
Bronchitis	2	0
Chest Pains	0	3
Pleurisy	0	1
Atelectasis	0	0
Pul. Embolism	1	1
Parotitis	0	2
P. O. Vomiting	69	32
Gas Pains	64	21
Leg Cramps	0	4
Backache	0	3
Diaphoresis	High %	Low %
Meningeal Apoplexy	0	1
Glycosuria	3 trace	0
Albuminuria	5 trace	0
Morph. (Av.)	4.4	3.6
Convalescence	10.5 das.	9.5 das.
Deaths	3	3

A comparison of complications is found in Table No. III. We have the habit of assuming that certain classical and characteristic complications follow a given anesthesia, but one does not realize the number of complications attributable to anesthesia until a detailed study of progress notes of individual charts is made.

Furthermore, there is an interrelationship between complications. Especially is this true in ether anesthesia.

Headaches are common in spinal anesthesia but in this study we find that ether contributed one half as many cases as spinal. Lundy of Rochester states that 17.4% have post-puncture headaches and all or most of these are probably due to the puncture and not to the anesthesia, because in Lund's experiment of plugging with catgut the puncture wound into the spinal canal he reduced post puncture headaches to 4.8%. The ether headaches are probably toxic in origin.

Catheterization following spinal is considered a frequent complication because neocaine paralyzes the bladder function, and yet in comparison we find only a few more spinal cases than ether which required catheterization.

It would seem self evident that pulmonary complications would predominate in inhalation anesthesia but there was practically no difference whatever in this group of three hundred cases. Each anesthesia contributed one case of pneumonia and each one case of fatal pulmonary embolism. Other pulmonary complications were of minor importance, namely, bronchitis, chest pains, pleurisy.

About five years ago McKittrick reported a series of cases comparing only the pulmonary complications in ether and spinal anesthesia. He concluded that spinal anesthesia was followed by almost three times as many pulmonary complications as ether. This view was accepted until two years later the Lahey Clinic practically reversed the figures in favor of spinal. It is now generally accepted that in upper abdominal operations there are two and one-half times as many pulmonary complications under ether as compared with spinal while in lower abdominal operations there is no difference. It would seem that in a larger hospital service a careful follow up would reveal many minor pulmonary complications with both types of anesthesia with ether predominating.

The type of anesthesia is probably no great factor in the production of pulmonary embolism. In this study we had one fatal pulmonary embolism with each anesthetic.

It is interesting but probably not significant that there were two cases of suppurative parotitis in spinal and none in ether.

Post-operative vomiting was present in 69 cases and 32 cases with spinal anesthesia. This is significant because vomiting disturbs convalescence, produces dehydration and disturbs kidney function. Nausea and vomiting is probably an etiological factor in production of gas pains, of which there is a higher incidence with general anesthesia than spinal

Diaphoresis is almost a universal complication of ether anesthesia and is rare in spinal. With this complication is associated dehydration with its complications.

SUMMARY AND CONCLUSION

A preliminary report of comparative complications in one hundred fifty ether and one hundred fifty spinal anesthetics revealed that: First, there were only three cases in which spinal neocaine failed to produce satisfactory anesthesia. Two of these were undoubtedly due to faulty technic.

Second, there were a larger number of low grade febrile reactions complicating spinal anesthesia but about three times as many high or sustained febrile reactions with ether than spinal anesthesia.

Third, there were twenty-five headaches following spinal anesthesia and one-half as many under ether anesthesia.

Fourth, the frequency of catheterization was about equal in both groups.

Fifth, pulmonary complications ran about equal number in both anesthetic groups.

Sixth, gastro intestinal complications such as vomiting, gas pains, etc., was over twice as common in the ether as the spinal group.

BURNS AND THEIR TREATMENT*

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It is of course impossible to carry out a rational treatment of burns without some knowledge of the underlying pathology, because the nature and extent of the physiological changes occurring from a burn govern the type of treatment put into effect. Therefore I will preface the discussion of treatment by a brief classification of burns, to serve as a basis of reference, arbitrary only for the purpose of this paper; I will also undertake to outline the principle pathological changes occurring locally and systemically in a burned patient, in order to lay a foundation for the therapeutic procedures which I will then take up in more detail.

It is not my purpose nor would it be possible for me, in a brief paper, to cover the entire field of treatment; rather will I endeavor to establish the rationale of certain methods which to my mind best put into effect the surgical principles involved in the care of burns.

In classifying burns I will not classify them according to etiology, i.e. thermal, chemical, etc., as in discussing the treatment I will make no reference to the care required for specific types such as burns from certain chemicals or from x-ray, radium, etc. Ordinarily burns are classified according to degrees, i.e. first degree burns are those causing erythema, second degree, causing blebs or blisters, and third degree, those involving the entire thickness of the skin or the tissues beneath. I prefer to divide the third degree into two parts thus giving four groups, the third degree being those causing destruction of the epidermis and part of the dermis, and the fourth degree being those wherein charring occurs and deep structures are involved. The latter group it is seldom necessary to consider, since these patients are sure to die unless the area involved is quite small; as a matter of fact in any severely burned patient all types may be present.

In discussing the pathology I will consider three major pathological processes. First: the changes in the skin, second: changes in the blood, and third: toxemia. These various processes are of course not clearly separated but closely interrelated and vary in severity depending on the degree of the burn incurred and the area of body surface involved, the latter ordinarily being much the more important of the two factors. One must bear in mind also that children have a much poorer toleration to burns than adults and will many times die from a burn involving from one-tenth to one-sixth of the body surface.

To consider first then the local changes in the burned skin. The evident change of course is the destruction of the outer layers by coagulation or charring as a direct result of the heat; just beneath this destroyed area is a zone where the change is largely a physiological one, consisting mainly of a change in the permeability of the capillaries, there being a lowering of absorbability but an increase in the ability of the cells to allow fluid to leave the vessels, which, coupled with the excess of blood sent to the burned areas as a result of the exposure to heat, gives rise to a marked fluid loss. This disturbance in capillary function persists for 24 to 36 hours depending on the severity of the burns and accounts for the occurrence of anhydremia. In considering changes in the blood we find that Underhill⁽¹²⁾ has ably shown the anhydremia or blood concentration to be due to plasma depletion. Chemical determinations on the exudate found in burns reveal it to be almost identical in composition with blood plasma; examination of the blood also reveals the marked concentration to be evidenced by an increase in the red cell count and a rise in hemoglobin percentage. These changes have been observed clinically as well as in experimental animals. Underhill and his co-workers have demonstrated in animals a fluid loss of 70% of the blood volume in 24 hours following a burn covering one-sixth of the body area which if present in man would correspond to a loss of 3500 c.c.

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*Read before the Lancaster County Medical Society, December 6, 1932.

This consequent anhydremia gives rise to a loss of blood function, since the blood being thick and sticky flows slowly through the capillaries and is quickly robbed of its oxygen content, causing inadequate oxygenation and consequent partial asphyxiation. Underhill has been inclined to give credit to the state of anhydremia for the various toxic manifestations in burned patients.

Examination of the blood at later stages reveals the presence, in severe cases, of acidosis and chloride depletion, which changes also will receive consideration in our discussion of treatment.

To turn to toxemia; this condition, next to primary shock, is the second most important factor in causing mortality. Although extensive investigation has failed to isolate a toxin capable of producing the profound changes noted following a burn, it is widely accepted as a fact that the burned tissues liberate a toxin, probably histamine-like in its character. Several conditions substantiate the toxin theory. Post-mortem examination of fatal cases shows changes in all the organs almost identical to the changes found following death from other toxemias, particularly those found in diphtheria patients. This theory is also borne out by the fact that fixation methods tending to retain the end products of tissue destruction in the skin have produced a marked lowering of the mortality from toxemia; and it is further substantiated by the fact that wet dressings applied later to these fixed surfaces seemed to liberate the toxin, bringing on a late toxemia. This latter phenomenon is not accepted by all clinicians however, as Glover(7) in his series did not find this situation arising when the moist dressings consisted of Dakin's solution. It may be that the boric solution used by Davidson(5) was the factor in bringing about a secondary toxemia. Glover in his 310 cases did not have a single death which could be attributed to a late toxemia. Experiments with dogs have been carried out, as shown by Davidson, wherein a burn inflicted on one of two dogs in parabiosis caused a toxemia in the other dog. By severing the circulatory connection before the end of 12 hours after the burn, the evidences of toxemia were lessened in the unburned dog and increased in the burned animal. Blood from this burned subject when transfused into a normal dog brought about a state of toxemia resembling that occurring in the burned dog. The true situation probably is that the anhydremia and toxemia both play important roles in bringing about a physiological state incompatible with life, and it is certain that we should make every effort to overcome both conditions.

The physician treating burns is concerned with two primary considerations; first to prevent death by combating shock and toxemia; second, to promote healing by properly protecting the burned area and preventing infection.

I will consider the different phases of treatment in the order in which the physician is called upon to carry them out. Mainly, the immediate or emergency treatment, the primary or early treatment, and the secondary or late treatment. First, however, there is that period over which the physician has no control, that during which treatment is administered by well meaning friends or anxious relatives who feel that something must be done during that period before the patient's care comes under the doctor's direction. All too often the skin is covered with some grease or unguent before it has been cleansed properly for the prevention of infection, and too often has the patient been subjected to the agony attendant upon the ill-advised removal of clothing charred tight to the skin. This situation can be remedied only through educational channels.

Our next consideration then is the immediate or emergency treatment covering the period of primary shock, caused by pain and the disturbances of circulation and heat regulatory mechanism, and which can be epitomized by the aphorism "treat the patient, then the burn."

Here three procedures are followed, the relief of pain, the control of shock, and the preparation of the burned area. The first is accomplished by the hypodermic adminstration of a heavy dose of morphine and should be the first thing done for the patient. The narcotic is then repeated often enough and in large enough doses to keep the patient free of pain, always remembering to discontinue its use as promptly as possible because the consequent depression of respiration is a factor in the not uncommon complication of pneumonia, not to disregard the danger of narcotic addiction.

Next to combat shock; this is accomplished by the application of external heat in the form of blankets, hot water bottles. hot pads, or in some cases the warm saline bath. Stimulants in the form of caffeine or adrenalin may be given hypodermically, although strong warm coffee by rectum serves admirably to provide both heat and stimulation. If hemorrhage has occurred blood transfusion may be indicated, although even in the absence of hemorrhage, severe shock is an indication for transfusion. Davidson attempts to give transfusion before the intervention of shock in a patient who appears to have a possibly lethal burn; then if shock develops the transfusion is repeated within the 24 hours. Whereas their mortality from shock during the first 36 hours has constituted 25% of their deaths, after the institution of the above regime, during a 2 year period, no death had occurred from shock during the first 36 hours. Any evidence of anoxemia, due to circulatory or respiratory failure, is to be combated by oxygen administration.

Lastly, our attention is directed to the burn itself. When the patient is free from pain and recovering from the immediate shock of the burn, an attempt is made to free the areas involved, of all dirt, clothing, or other foreign material. Soap and water serve well, though benzol or ether may be required to remove grease. In the case of a severe burn where the clothing must be cut away, this can best be accomplished by first placing the patient in a bath of 2 to 3 percent saline at a temperature of 100 degrees, the tub being padded with blankets and sheets. I might interpose at this point that many surgeons use a bath of this type for the continued treatment of their patients, the patient's excreta simply being drained from the tub and fresh saline added. It is certain that such a method gives a degree of comfort not attained in any other way, and for the patient to whom death will certainly come this offers the most comfortable treatment for his dying hours.

It is probable that surgical debridement at this stage is the best treatment for fourth degree burns, as this will give a surface suitable for grafting at the earliest possible moment and cut down the incidence of infection and toxemia. though in some cases adding to the shock; if extensive debridement seems indicated, the amount of shock suffered can be materially reduced by the administration of a general anesthetic. The severe case must be handled on the theory of choosing the lesser of two evils when deciding on the extent of and time for debridement.

Complications in the nature of lacerations, fractures, etc., must be sought for and treated at this time, attention being given also to special areas as the eyes, which if burned may require special treatment by a colleague; then, too, the necessity for anti-tetanic serum must be considered.

Having thus briefly covered the emergency care of the patient we come to the period of what I shall call early or primary treatment, and in this discussion it is to be remembered that I am taking up treatment which will be adequate for the more extensively burned patient. It will be obvious that certain portions of the treatment can be wholly or partly dispensed with in the care of moderate or minor burns. We have then to deal with two phases, the systemic treatment and the local treatment.

The general or systemic conditions requiring attention are anhydremia, acidosis, chloride depletion, pain, and shock if persisting. Fluids are given freely—by mouth, water and fruit juices,—by rectum, normal saline, soda bicarbonate solution or both—intravenously, glucose in normal saline. Roughly one should give about a liter of fluid per 25 lbs. of body weight in 24 hours. This is continued for the first 48 hours or longer if any symptoms of shocks. toxemia, or acidosis are present. The guide to the need for further fluids is the repeated estimation of hemoglobin percentage which of course indicates the degree of anhydremia, varying in direct proportion. The observation of hemoglobin percentages also has a prognosticating value, it being found that an increase of 40% if maintained for any length of time is incompatible with life; when it reaches 125% of the normal value, life is precarious. The occurrence of edema is the signal to discontinue fluid administration. I have been able to find but one report(7) where a burn fatality was felt to have been due to the over zealous adminstration of fluid. While the kidney output may be markedly lowered, it soon rises in response to the administration of chlorides and glucose. Here also blood transfusion may be indicated. While it has been shown that the blood depletion is largely due to plasma loss, and the addition of saline in a large measure compensates for this. if transfusion is desired it should be of the exsanguination-transfusion type as advocated by Robertson and Boyd(10). The exsanguination method overcomes toxemia by removing the toxin laden blood cells and replacing them with blood from a donor. This is practicable only in children on account of the large amount of blood required, usually figured on a basis of 35 c.c. per pound of body weight. The site chosen is usually the superior longitudinal sinus or saphenous vein as they allow a more free flow of blood. Citrated blood at a temperature of 100 degrees is used, alternately giving and removing 50 to 100 c.c. at a time, depending on the condition of the pulse. If however, fixation methods are used locally, the toxemia can usually be prevented or controlled to such a degree that removal of toxins by exsanguination will not be necessary.

The procedures just outlined will overcome all the physiological changes mentioned except the pain and shock. It is expected that the pain at this period will have been controlled by the local application on the burned area to such a sufficient degree that morphine can be supplanted by the coal tar derivatives and barbituric acid compounds, the latter particularly being indicated to overcome insomnia and apprehension, which are both rather marked in a severely burned patient. Shock is further controlled by the continuation of heat, preferably by placing the patient in a tent or covered cradle heated with a light bulb or other source of heat. The temperature under such a covering should be checked by a thermometer and kept near 100 degrees F; also one should not neglect to protect the patient's eyes from the light if bulbs are the source of heat. A continued low blood pressure is to be controlled by the administration of adrenalin or ephedrine, digitalis being used if myocardial weakness becomes evident. The importance of adequate treatment during the first three days must be stressed. and the value of excellent nursing care cannot be over estimated. It has been found that by far the greatest mortality, particularly in children, occurs between the ends of the first and the third day(1).

I shall first discuss briefly a number of methods which have been employed by various writers but which have not been granted the distinction of being generally adopted. In considering the efficacy of these procedures we must bear in mind the few main objects which local treatment attempts to achieve. They are, to diminish pain, to prevent fluid depletion, to decrease toxemia. to prevent infection, and in second and third degree burns to splint the wound areas and promote epithelization.

One writer simply exposes the burns to air and treats them with the ultra violet ray or sunlight; another explains his method of spraying the burned areas with 1 to 5% silver nitrate solution and exposing to ultra violet light, a protein precipitation being brought about in this manner. Pfab(9) advocates the application of thin sheets of silver foil directly to the burned area after the removal of blisters; he claims for this method which he uses in all degrees of burns almost immediate painlessness, marked bactericidal effect, rapid promotion of granulation and epithelization, and a relatively greater freedom from cicatricial formation and keloid. Only the outside gauze dressings require changing. I have had the opportunity of using this method of treatment on certain wounds other than burns and can vouch for the efficacy of the procedure.

Various forms of ointments have been advocated but I can see no basis for their use except in the first degree burn where some type containing a local anesthetic should be used. Unguents have the property of interfering with drainage when on burns of second degree or deeper; they also produce a poor type of granulation in the wound where grafting is going to be required.

Wet dressings have been more widely used in the past than at present, among the solutions used are lead lotions, carron oil, and various alkaline solutions; this type of treatment, too, falls short of fulfilling the requirements previously set out as desirable in a local application.

In the occlusive dressing group, the best known is the paraffine method, introduced in France by De Sandfort. This method consisted in painting or spraying one or more layers of melted paraffine over the cleansed burn. The dressings protect and splint the burned areas. This method gained considerable vogue during the World

War, being particularly advocated by Sherman(11) and his associates who report 50,000 cases in whom they believe better results were obtained than by other methods. Monteith(8) has proposed the use of normal horse serum which after the addition of a small amount of cresol, is sprayed over the burn twice daily; the burn is prepared for this treatment by bathing in a normal saline solution. His results bear out the efficiency of the method and are concurred in by South American writers.

To refer again to the salt bath advocated by Blair(2), we find him using it particularly for children who are uncooperative in the matter of dressings. The patient is placed in a 2 to 5% saline solution for 1 to 2 hours daily or if feasible as in an extremity the burned part only is immersed; the patient in the interim is kept under a heated cradle. If crusting or infection intervenes, saline solution or antiseptics such as hexylresorcinal or acriflavine are poured over the burns.

In the group of agents which act by fixing the burned tissues, the principle ones used are picric acid and tannic acid. The former is prone to cause poisoning, a number of such cases having been reported in the literature, and for this reason its use is inadvisable. The use of tannic acid, first advocated by Davidson(4) in 1925, has become wide spread and is probably the most widely used method at this time, receiving by far the largest mention in the literature.

This procedure came to my attention in 1926 when it was being tried in comparison with other methods of treatment then in vogue, and after a trial I discarded all others in its favor. At first we used it in the form of wet dressings in the form of 2.5% strength, but now use the 5% solution applied with a spray, according to the method of Beck and Powers(3), which procedure is now also followed by Davidson.

The hospitalized patient first undergoes the treatment outlined earlier in this paper, then being placed in the heated tent on sterile sheets is sprayed over the burned areas with 5% tannic acid, every 15 minutes if the burns are severe, every 30 minutes if moderate. This produces a dark brown tanning of the affected areas in from 12 to 24 hours, 18 hours usually being sufficient. Blebs forming after the treatment is begun are opened and drained with sterile precautions to allow tanning of those areas also. The burns are then found to be covered with a firm, pliable, impervious coating which effectively stops pain within a very short time. In fact, the second or third dose of morphine is rarely necessary. The tanned areas are then kept dry and do not require dressing until they begin to peel. While no danger has resulted from the use of tannic acid about the eyes it has seemed advisable to bring about tanning in these areas by the use of moist tannic acid dressings or tannic acid jelly. The eyelids, nares, and lips, and the orifices of the genitalia, if there are burns in this area, are kept softened with petrolatum. If an ointment or oil has been applied to the burns before admission, it must first be removed with benzol or ether before beginning the application of tannic acid.

The coagulated crusts are then undisturbed for from 1 to 2 weeks when the edges begin to curl and peel, and are trimmed away as they loosen leaving a healed or healthy granulating surface. In the case of the deeper third degree and fourth degree burns the coating gradually becomes raised by serum. in which event the raised areas are excised and saline or saline jelly dressings are applied. If infection occurs and pus forms under the tanned area then sections of the coating are removed to allow for drainage and irrigation. Glover(7) has recommended irrigation with Dakin's solution in these cases, while Blair(2) uses acriflavine. However normal saline seems to control infection quite readily in most cases in which it occurs, if drainage is adequate. It is questionable if tannic acid therapy of fourth degree burns is justified because the necrotic layer is always so thick that the tanning does not penetrate the depth of the burn. Much time in obtaining a healed area and much pain from dressings can be saved by the early removal of all destroyed tissue and the performance of skin grafting.

As regards the ambulatory patient for whom we had continued the wet gauze type of tannic acid dressing, our practice now is to apply the tannic acid jelly which has recently been made available on the market; though often requiring application for a second 24 hour period this method has proven quite satisfactory. The tannic acid solution used must be made up fresh, as it deteriorates on standing; but this is readily accomplished by dissolving a tannic acid powder in water. For a 5% solution, 12.5 gms. are dissolved in 250 c.c. of water or roughly 4 to 5 teaspoonsful per glass of water. The powder can be put up in marked packets and kept readily available for this purpose. It is well to know that metal parts of sprays or atomizers will rapidly deteriorate after contact with the acid, so that glass and rubber sprays are to be preferred.

To realize the desirability of the tannic acid method of treating burns, when accompanied by the adequate control of the systemic changes occurring in a burned patient, it is only necessary to review the literature on this subject. Thus we find Glover⁽⁷⁾, of Cleveland reporting a reduction in mortality from 14% to 9.6% in a series of 310 consecutive cases. Harris of Toronto, a reduction of from 26.6% to 12%. Herzfeld and Wilson of Edinburgh report an improvement to 9.5% from a previous mortality of 38%. Beekman's⁽¹⁾ mortality rate at Bellevue in New York City dropped from 28% to 15% in a series of 434 cases, while a review of hospital staffs throughout England showed the method to have been widely adopted with uniform decrease in deaths from burns. The only dissenting opinion which I was able to find was that of Donald⁽⁶⁾, writing in the Lancet, who feels that if certain principles are followed the local treatment is unimportant. He gives credit for the general lowering of mortality rates to the improved methods of combating shock and toxemia. It is true that the procedures advocated by Davidson included the routine for overcoming toxemia which I have outlined. and that the more common acceptance of these methods occurred simultaneously with the adoption of tannic acid and undoubtedly play a large part in the lowered mortality rates generally observed.

We have finally to consider the secondary or late period. Here also we have two phases of treatment, the local and systemic. The latter consists in the rehabilitation of the patient's general condition, and will probably not require consideration except in the cases of third and fourth degree burns, or extensive second degree burns. It is not uncommon for a marked anemia to develop when any very extensive granulating area is present, and since its onset may be insidious, the examination of the blood for reductions in red cell count or hemoglobin is indicated. If mild the anemia can be controlled by the administration of iron, copper. liver and tonics; if severe these efforts should be preceded by the transfusion of whole blood.

While it is common to find albumen in the urine following burns, it is rare for nephritis to persist if not already present before the accident. At this stage sun baths or ultra violet light exposures are very efficacious.

The two conditions found in the burned area requiring attention during this period are unepithelized surfaces and contractures. If the granulating surfaces are small in area and filling in well from the edges it may be possible to avoid skin grafting. The promotion of skin growth is facilitated by saline baths or dressings; and exposures to the shorter wave lengths of ultra violet light which stimulates the epithelial cells and controls infection. However, large areas should be subjected to graft implantation as soon as a healthy bed can be formed. The choice of the type of graft to be used must be decided in each individual case. The pinch graft can be used most easily and leaves an area which heals quickly but is not adapted to exposed surfaces because of the cosmetic effect. Here split or full thickness grafts are used. In most all cases autogenous implants will be used unless the area involved is so large as to render impractical the removal of so much skin from the patient. Great care must be used with heterogenous grafts as they take with difficulty even if the donor and recipient have matching blood types.

One cannot begin too early in efforts to avoid scar and postural contractures; of course, there is no excuse for the occurrence of the latter, although the former will sometimes develop despite every effort to the contrary. Opinion as to the best method of avoiding contractures is changing and the splinting procedures are being supplanted by active and passive motion, and massage; active motion particularly being advocated. The plastic repair of burn scars and contractures falls without the scope of this paper and will not be discussed.

A review of reports⁽⁶⁾ on the treatment of burns shows a gratifying improvement in results. The mortality rate has been greatly reduced and occurs now almost wholly in those patients dying in the period of initial shock. It is unlikely that any further reduction will be obtained except as methods now in use are more widely accepted or unless further revolutionary change in treatment occurs. To those active in the fields of preventive medicine falls the burden of reducing the incidence of burns among the general public and in industry through a program of education.

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THE INTERPLAY OF SCIENCE AND PRACTICE IN THE HISTORY OF MODERN MEDICINE

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IN TWO PARTS—PART ONE

In order to appreciate fully the value of the study of medical history we must be vividly conscious of certain fundamental truths. In spite of the risk of being accused of uttering trite platitudes I wish to list these fundamental concepts. First, the nature of men and of physicians has been fundamentally unaltered throughout the ages. Second, most of our "Modern" problems are no more modern than the germ-plasm which we transmit, they existed wherever and whenever great civilizations were established; adorned in new terminology we often mistake them for new arrivals. Third, Medicine aims primarily at the prevention, cure or alleviation of disease, all other achievements are secondary to these ends. Fourth, Medicine is composed of two equally important parts, practice and science. The practice of medicine concerns itself directly with the welfare of the individual patient and the race and in accomplishing this end it appropriates all that originates as the science of medicine. The science of medicine is more cosmopolitan than the practice of medicine, since it mingles with all of the sciences, appropriating from them all things which may apply to the practice of medicine. It is the science of medicine which selects, evaluates and either discards or passes on to the practice of medicine, new methods and applications from the other sciences. The practice and science of medicine must retain their separate personalities, but must be as closely related as the Siamese twins. Progress in medicine results only when both science and practice retain their individuality and recognize their separate problems, but cooperate in maintaining the unity of medicine. Dominance of either the science or the practice of medicine eventually leads to confusion and sterility. Fifth, medicine must stand aloof from "systems" or schools of philosophy and in so doing acclaims the universility of knowledge.

There is much discussion today regarding the teaching of medicine; especially regarding the relative merits of the science and practice. One group of medical educators warns us that we are graduating biochemists, physiologists, pathologists or pharmacologists and not physicians, and that this tendency is leading to a general lowering and neglect of the practice of medicine. Another group is equally emphatic in the denial of this charge and claim that even more time should be devoted to the fundamental branches and less to the clinical branches. In evaluating these statements we have but one yard stick—History. That history repeats itself is more than a platitude. To those whose opinion and authority shape modern destinies, history is as invaluable as the transit to the surveyor—with it they can sight the line of the past and project that of the future. Professor Sudhoff admirably expressed this thought when he wrote "The history of medicine forms an essential part of medical science and is indeed as serious a science, based on experience and observation, as any other department of natural philosophy. It links every new finding with previous findings, tests and analyses every detail, lays bare the inner connection and reconstructs finally, from a whole series of single facts, the things of the past whether they took place among a whole diseased people, in the lecture halls of a medical school, or in the mind of a great physician of bygone days. . . . Thus the study of the past, for a while regarded as superfluous, acquires vast significance for all medical problems and not merely for the understanding of one or more isolated instances"(1).

It is difficult to assign a definite date to the beginning of what we call "modern" medicine or to the beginning of the alternate antagonism and fruitful union of the practice and science of medicine. In the Fifth and Sixth Centuries B. C. the rivalry between the Schools of Cos and Cnidus is readily interpreted as a struggle between the science and practice of medicine. The clear cut criticism of the ultra scientific tendencies of the Cnidean School by the essentially practical writers of the Hippocratic Corpus has a familiar ring to modern ears. The same rivalry can be traced through the Middle Ages but the thread is often less distinct. The Seventeenth Century marks the dawn of truly modern medicine, from that period on we can understand and appreciate the ebb and flow of medicine, and our ancestry stretches back to it in an unbroken line.

The Seventeenth Century bore the fruit of the Renaissance. The value of the experimental method was fully appreciated and every branch of science was being enlarged and enriched by its application. The practice of medicine had as its outstanding representative the great Englishman, Thomas Sydenham, while the science of medicine boasted of William Harvey, Robert Hooke, Richard Lower, Marcello Malphigi, Francis Glisson, Thomas Willis, Santorio Santorio, Giovanni Borelli, Franciscus Sylvius, Thomas Bartholin, Theophile Bonnett and many others. Evaluated by Twentieth Century standards we see intense enthusiasm but a general failure to grasp the spirit of unity in medicine. The mutual interchange between science and practice was in general misunderstood. Sydenham was often bitter in his criticism of those who hoped to advance medicine by the application of chemistry, physiology, or even pathological anatomy. "Others have more pompously and speciously prosecuted the promotion of this art by searching into the bowels of dead and living creatures, as well sound and diseased, to find out the seeds of disease destroying them, but how with little success such endeavors have been and are likely to be attended, I shall in some measure make appear"(2). Again he boasts of his lack of knowledge of contemporary work remarking that he thinks while others read; to a young student who inquires of him as to what books of medicine he shall read he replies "Read Don Quiote its a good book." If we are amazed and puzzled by these utterances of "The Prince of Physicians" they become at least partly understandable when we know more of the science of medicine as it existed in his day. Seventeenth Century medical scientists were intoxicated by the new knowledge in the fields of physics, chemistry and mathematics and with contagious enthusiasm but with a lamentable failure to recognize the needs of clinical medicine they formulated theories of health and disease based on physio-chemical laws. To the Iatrophysical School the body was a miniature machine shop where grinding, crushing, filtering, and distilling processes were continually at work —coordinated in health and unbalanced in disease. To the Iatrochemical School health and disease were a series of imaginary chemical reactions. The fundamental idea of applying the laws of physics and chemistry to medicine was admittedly admirable but neither these sciences nor medicine were quite mature for the union. The immaturity of Seventeenth Century medicine is obvious when we realize that the concept of a disease as a characteristic grouping of symptoms with diagnostic signs and a definite predictable history was not current knowledge. The recognition of a disease as a clear cut entity was the crowning achievement of the hard headed but clear thinking Sydenham. He clearly stated his idea of the problems of medicine and the method of solution when he wrote: "Now I judge that the improvement of physics depends (1) upon getting as general and natural a description or history of all diseases as can be procured and (2) a fixed and complete method of cure"(2). He wisely warns that in writing the history of disease all philosophy and theory must be laid aside and a true and exact picture of the disease be given. It was his belief that one of the greatest needs of medicine was an exact and scientific classification of disease, modeled after the classification which the botanists were so successfully applying to plants.

An appraisal of Seventeenth Century Medicine seems to warrant the conclusion that the practice of medicine, as personified in Sydenham, was fully conscious of its needs and problems and of the method of attack, while the science was still floundering in a state of joyous inebriation. While science and practice were thus un-united and almost antagonistic a new concept was dawning which was eventually to bring science and practice to a common recognition of their relative interdependence. This new concept was pathological anatomy. Theophile Bonet was collecting all recorded autopsies of the Sixteenth and Seventeenth Centuries and Thomas Bartholin was attempting the same thing on a less pretentious scale. Both Bonet and Bartholin were much interested in rare and curious findings and neither was able to synthesize or advance to broad generalizations. In the work of Jean Fernel and Johann Jakob Wepfer pathological anatomy was beginning to find its correct relationship to clinical medicine. Both of these workers were attempting to associate the clinical and post mortem findings. Wepfer is particularly remembered for his discovery of the relation of cerebral hemorrhage to apoplexy. From this modest and largely unsystematic beginning pathological anatomy emerges to point the way to clarification and unity in medicine.

Seventeenth Century medicine made a brilliant start and pointed the way for future progress but the pompous Eighteenth Century was slow in recognizing the value of its inheritance. There was much excellent individual work in this century but in general the Eighteenth Century seemed to mark time and from a psychological as well as a chronological standpoint is mainly a connecting link between the Seventeenth and Nineteenth Centuries. Perhaps nothing illustrates the languor of Eighteenth Century medicine better than its failure to appreciate the importance of Leopold Auenbrugger's discovery of percussion which had to await until the genius of French Medicine in the Nineteenth Century recognized its great value. Under the stagnant surface, however, we can recognize a swifter current which was moving toward the brilliant outburst of the Nineteenth Century. Sydenham had emphasized the necessity for some method of classifying disease and had suggested that this might be done by methods similar to those being used by the botanists. Francois Boissier de Sauvage, a botanist-physician, attempted such a classification which finally culminated in his Nosological System published in 1763. While the idea back of this attempt was excellent, and can be attributed to the genius of Sydenham, the manner of execution was characteristic of the Eighteenth Cenutry. Sauvage failed to grasp Sydenham's basic concept of a disease as a characteristic grouping of symptoms and mistook individual symptoms for separate disease, hence we find him listing the astonishing total of 2,400 different diseases! He recognized, for instance, eighteen kinds of angina, nineteen of asthma, twenty of pleurodynia, twenty of phthisis, etc.(3). In his preface he stated that "a division based upon the anatomical changes would not be possible and still less feasible any grouping depending upon the causes of diseases, because as a rule the causes are unknown"(3). This classification illustrates the weakness of arm chair medicine. Could an alert, austute clinician daily studying disease in a first hand manner at the bedside, have seriously upheld such a system of nosology, especially after having read Sydenham's clear cut statement of methods? How far this was from the original idea of Sydenham can be fully appreciated when we read his terse, lucid descriptions of disease. Although the final result was unwieldy and useless to practical medicine, the idea had, nevertheless, taken root and practical medicine from now on will struggle with the problem of disease as a distinct entity and its classification.

The second contribution of the Eighteenth Century was the further development of pathological anatomy. Giovani Battista Morgagni published his book, "The Seats and Causes of Disease" in 1761. Most of the autopsies were performed by Morgagni or his immediate associates and he gave a complete description of the clinical course during life and tried to associate the clinical and post morten findings. The scope and aims of this epocal work far surpass anything of the Seventeenth Century and laid the foundation upon which the brilliant Paris School of the Nineteenth Century was erected. Aside from Morgagni's work the science of medicine contributed little else of value. The systems and theories of Stahl, Hoffman, and Boerhaave contain little of permanent value. The theory of the irritability of tissues originally formulated by Francis Glisson in the Seventeenth Century, was experimentally investigated on a grand scale by the physiologist, Albrecht von Haller and was used by John Brown as the basis for a theory of disease. This is important because we are to see this theory, somewhat modified, revived during the brilliant period of the early Nineteenth Century by Broussais and finally lead clinical medicine into dangerous by-paths.

The most momentous political event of the late Eighteenth Century was the French Revolution. In this cataclysmal unheavel France threw off a yoke which was crushing and destroying her vitality. The new liberty warmed and stirred the imagination like rare old wine and under its stimulus French medicine glowed with the intensity almost unparalleled in the past history of medicine. The brilliant Paris School was inaugurated by two workers in clinical medicine, the gentle Philippe Pinel and Jean Nicolas Corvisart, the favorite physician of Napoleon. Pinel's greatest work was his reform of the methods of treating the insane. Of greater interest to us, however, was his "Nosologie Philosophique." In this he divided diseases into genera, orders and species much after the manner of Sauvage and other Eighteenth Century systemists but he stressed the importance of considering each disease as a characteristic group of symptoms with a specific cause. His most important contribution was the classification of inflammation into those involving the skin, mucus membranes, serous membranes, connective tissues, muscles and points. He attempted to show the similarity of inflammation in all similar tissues regardless of their anatomical location. This concept formed the nucleus of the work of the brilliant Bichat. Corvisart was an excellent clinician who stressed the importance of physical diagnosis and post mortem studies. He was one of the first to recognize the importance of Leopold Auenbrugger's discovery of percussion and had the book translated into French in 1808, nearly a half century after its appearance.

The prodigious labors of Francis Xavier Bichat laid the foundation for the science of medicine in the great Paris School. He was the founder of the science of histology and his work turned the attention of pathological anatomy from a consideration of the gross pathology of the entire organs to a consideration of the pathological changes in the individual tissues of the body. His work thus stands as a pivot between the Eighteenth Century pathology of Morgagni and the Nineteenth Century pathology of Virchow. Without the aid of the microscope Bichat identified twenty-one types of tissue and sought to discover the pathological changes produced in them by disease. In the introduction of his "Descriptive Anatomy" he sounded the keynote of modern times. "Dissect in anatomy, experiment in physiology, follow the disease and make the necropsy in medicine; this is the threefold path without which there can be no anatomist, no physiologist, no physician"(4).

The discovery of auscultation by Laennec and the revival of the art of percussion by Corvisart gave physicians methods for exact diagnosis and for almost the first time in history, physicians began to actively examine patients rather than to passively observe them. Laennec set the pace and the whole Paris School followed with an enthusiasm which was only surpassed by the brilliant results. A painstaking physical examination employing especially the new methods of auscultation and percussion, an eager attempt to detect new physical signs and finally a careful autopsy in which the primary purpose was to correlate the pathological findings with the physical signs and the clinical course of the disease, this in brief, was the method of procedure. Here for the first time we see the practice and science of medicine intimately associated and forming an indivisible unit. The characteristic groupings of symptoms which constitute a disease were now being definitely correlated with alterations in structure. With amazing rapidity new diseases and their pathognomonic signs were described. In its breathless haste the impetuous Paris School was in danger of running to extremes . . . a stabilizing influence was needed. This influence came when Pierre-Charles-Alexander Louis, one of the great clinicians of the Paris School and finally its acknowledged leader, introduced the stern reality and unemotional check of Medical Statistics. The dry, ruthless, mathematical analysis of Louis pointed out many fallacies and stabilized this brilliant group. The achievements of the Paris School were momentous. By clinical and post mortem analyses Gaspard Bayle and Laennec gave an accurate description of tuberculosis and recognized that differences in gross appearance were the result of different stages of the same disease. Laennec accurately described the signs and post mortem findings in emphysema, bronchitis, pneumonia, pulmonary edema, etc. Pierre Bretonneau, another pupil of Corvisart, gave an accurate description of diphtheria and insisted upon the identity of diphtheria and laryngeal croup. As a result of his studies on diphtheria he advanced a theory of specific inflammation and specific diseases which contained many new and valuable ideas. Other brilliant achievements of the Paris School were the discovery of gastric ulcer by Jean Cruveilhier; the work of Louis and Gabriel Andral on typhoid fever.

The brilliant work of the Paris School was due primarily to the perfect cooperation of the science and practice of medicine and secondarily to perfect balance. Clinical medicine utilized the discoveries of and profited by close association with the science of medicine but did not allow science to dominate. Clinical medicine retained its individuality and was always fully conscious of its problems which are peculiar to it and cannot be entirely solved by the magic of science.

The new methods of the Paris School spread to England and Ireland and lead to the establishment of the London and Dublin Schools. A mere mention of the names associated with these schools will be sufficient to identify them. In London the Guy's hospital group included Thomas Addison, Richard Bright, Thomas Hodgkin and James Parkinson. The great Dublin School included Robert Graves, William Stokes, Dominic John Corrigan, John Cheyne and Robert Adams. These two schools followed the principles of the Paris School and like it recognized the unity of the science and practice of medicine without ever allowing science to dominate practice.

Progress in medicine is never a steady onward flow, but rather an erratic ebb and flow with slow forward movement. Opposition to the new methods and results of the Paris School was to be expected and the most bitter opposition came from Paris. The erratic, Paracelsian, Francois-Joseph-Victor Broussais harshly and bitterly denounced their achievements. Their tendency to describe a disease as a characteristic grouping of symptoms with pathognomonic signs, a definite course and typical pathologico-anatomical findings was particularly distasteful to him. He accused them of trying to make concrete entities out of pure abstractions. The whole progress he distainfully labeled as "Ontology". Their keen interest in pathological anatomy he regarded as absurd. Concerning Laennec's reports on the post mortem findings in tuberculosis he wrote, "The pathological alterations considered by themselves, are simply curiosities, and are not of the slightest utility to anybody who may feel disposed to study them, because they are all either the products of simple inflammation, or else they owe their origin to some cause which does not fall legitimately in the domain of physiological pathology"(5). His own school of medical theory he called "Physiological Medicine." Since characteristic disease entities did not exist he believed that attention should be focused on the disturbance in function. To him all disease was due to irritation and gastro-enteritis was at the bottom of all pathology. The healing power of nature was non-existant. His therapy consisted of copious leeching and bleeding. The importance of Broussais and his "Physiological Medicine" lies in the fact that it lead to the formation of the interesting German School of "Physiological Medicine."

(To be continued)

REVIEW OF LITERATURE ON TREATMENT OF POLIOMYELITIS*

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Until about twenty years ago the treatment of poliomyelitis was entirely symptomatic as the etiology was admittedly vague.

When more intensive study tended to place the cause on certain organisms obtained by cultures from washings from the nasal passage of patients with the disease what was supposed to be specific treatment was begun.

Horses, sheep and other animals were inoculated with this material and serum from the blood was used to treat poliomyelitic patients and beneficial results were claimed.

Blood serum from horses inoculated with various strains of streptococci and from others with no infection, whatever, was used with apparent advantage.

But it was observed that nasal washings from poliomyelitic patients would produce the true disease only in particular species of monkeys so that it was decided that the true virus was ultramicroscopic; that it was filtrable through an unglazed porcelain filter and not culturable by any known methods.

It was generally admitted that convalescents from poliomyelitis were permanently immune to the disease. This left, then, one alternative therapeutic procedure—the use of a serum from a convalescent. This seemed rational and was adopted as a standard treatment in a very large measure.

However, it seemed strange that convalescent serum gave equally good results whether given intramuscularly, intravenously or intraspinally. Furthermore, it was not clear why the streptococcus horse serum of Rosenow should give as good clinical results as convalescent serum.

The evaluation of these therapeutic materials forms the background for much of the literature on poliomyelitis during the past two years.

The opinions may be divided into two groups; those who believe that convalescent serum is of specific therapeutic value and those who deny that the disease is materially influenced by any present known treatment.

Representative of the first group is the following. C. B. Hecht (*Med. Journal and Record*, 1932) reports 139 hospital cases of poliomyelitis with a mortality of 15.6%. He is of the opinion that convalescent serum was of some value though no comparison was made between treated and untreated cases.

Shaw, Thelander and Limper (*J. A. M. A.*, 1930) reported on 104 cases in the Children's Hospital, San Francisco. Specific treatment was attempted in 92 cases. The treatment consisted of pooled and unpooled serum from convalescents given by transfusion and intramuscularly, and immune goat serum given intramuscularly. Of 53 patients treated before paralysis 28 showed no paralysis later. 15 showed persistent paralysis and one died. Of 39 others with weakness 9 showed only transient weakness, 23 had permanent paralysis and 7 died.

These authors are convinced of the value of serum and believe that hyper-immune serum is the most promising.

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*Read before the Republican Valley Medical Society meeting, Holdrege, May 18, 1933.

Josephine Neal (Medical Times) observes that the serum from horses inoculated with virus from poliomyelitis has about five times the neutralizing power of convalescent serum and should be effective, if any is. Singularly enough Rosenow's horse serum, which has no neutralizing power over poliomyelitic virus, has been found clinically as effective as convalescent serum. Dr. Neal expresses a doubt that either horse serum or human convalescent serum is capable of passive immunization.

In this connection should be noted the observations of Paul, Salinger and Trask (*J. A. M. A.*, 1932) that in 222 families in which were frank cases of poliomyelitis that other children developed minor illness, fever, sore throat, headache and vomiting. 39% of the children so exposed developed these symptoms while in 60 control families the same age children showed only 9% affected.

Furthermore, poliomyelitis virus was isolated from the nasal washings of two of these exposed children with minor illness while negative results were obtained from 10 others with the minor illness and so exposed. These observations indicate that more accurate knowledge of the epidemology and incidence of the disease is necessary before a correct evaluation of treatment can be made.

Of the second group, or those who believe that serum or any other known therapeutic agent is of no clinical value in this disease, the literature is much more extensive and rests on a more thorough investigation. In most cases the diagnosis is proved by lumbar puncture and the results properly controlled. The following cases are illustrative.

Kramer, Aycock, Solomon and Thenebe (*J. A. M. A.*, 1932) report 84 cases half of whom received convalescent serum while the others did not. No case was accepted for this study which had lasted over three days nor any that showed paralysis or muscle weakness. In all cases physical and spinal fluid findings were characteristic of preparalytic poliomyelitis. The serum was given on admission and additional doses were given from 8 to 12 hours apart. Careful muscle examinations were made on admission and from 24 to 48 hours thereafter. Paralysis developed in 51% of the 82 cases and 2 of the treated group died of respiratory paralysis. The authors conclude that the evidence affords no proof that the serum was of any value.

W. H. Park, representing the poliomyelitis committee of the New York Academy of Medicine. reported a study of 927 representative preparalytic cases (*J. A. M. A.*, 1932). 519 were treated with convalescent serum and 408 received no serum. The paralysis resulting was noted at three weeks and at 5 and 6 months. Paralysis developed in 19.6% of the treated cases and in 11% of the untreated cases. The mortality was 3.8% in the treated cases and .9% in the untreated cases. The result of this study by a group of pediatricians and public health experts affords no proof that convalescent serum is of any value.

Park states that it is now definitely decided that poliomyelitis is due to a true filtrable virus and that no disease due to a true filtrable virus is known that can be improved by an antiserum after clinical symptoms have developed.

Even so it is of vast importance to the public and the individual that a correct diagnosis be made in the preparalytic stage so that the patient may be isolated.

Abt closed a paper on the subject by saying: Convalescent serum is still on trial and should be subjected to further clinical tests by competent observers.

SHAKE WELL

"Good gracious, Junior, I forgot to shake the bottle before I gave you that medicine."

"Don't worry, mummy, I'll turn a few handsprings."—Chicago News.

The idea is advanced from New York that hardware dealers sell drugs in competition with drug stores that sell hardware. This might be a sort of counter irritant.—Weston (Ore.) Leader.

Dr. Mayo says the human body is worth sixty-seven cents. How does he explain a doctor's bill for $500 worth of repairs on a sixty-seven cent machine?—Schenectady Union-Star.

The only time a pedestrian ever has the right of way is when he is en route to the hospital in an ambulance.—Greensboro (Ga.) Herald-Journal.

The Nebraska State Medical Journal

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THE AMERICAN MEDICAL ASSOCIATION MEETING IN MILWAUKEE

All reports agree that the recent meeting of the American Medical Association in Milwaukee was one of the most satisfying ever held in that everything went smoothly in the scientific sessions and in the House of Delegates—and a similar report comes from the Woman's Auxiliary. Great praise is bestowed upon the local committees of arrangements.

The attendance was around 4600, which is above the average attendance during a series of years and is about double the attendance at the New Orleans meeting of a year ago. The loss in fellowships for the year is negligible. It is thought that a psychology of recovery from the economic stress gave an impetus to the Milwaukee meeting.

The House of Delegates approved, unanimously, the stand taken by the officials of the American Medical Association in favor of the minority report of The Committee on the Costs of Medical Care.

The election as President-elect of Dr. Walter L. Bierring of Des Moines is especially gratifying to the middle west and is the first recognition of middle western medicine by the American Medical Association. (We know about the Mayos, but they represented an institution). Dr. Bierring, native of Iowa, is well known in the entire west, as indeed he is all over the United States and somewhat in Europe. He is a graduate of the State University of Iowa College of Medicine, 1892, studied abroad, was dean of his alma mater for some years and also professor of the theory and practice of internal medicine, before removing to Des Moines where he has devoted himself to internal medicine. He was one of the organizers of the national examining board and is its secretary. He is one of nature's noblemen and will perhaps come nearer representing a cross section of the entire profession than any of his predecessors for many years.

Nebraska physicians at Milwaukee meeting, in part:

E. W. Bantin, Omaha; Harry W. Benson, Oakland; A. David Cloyd, Omaha; Frank Conlin, Omaha; Dunn, Omaha; Max Fleishman, Omaha; Herbert F. Gerald, Omaha; John Hewitt Judd, Omaha; John Prentiss Lord, Omaha; Robt. D. Schrock, Omaha; E. K. Steinberg, Aurora; J. P. Tollman, Omaha; W. P. Wherry, Omaha; B. F. Bailey, Lincoln; R. W. Fouts, Omaha; Edward R. Hays, Falls City; H. R. Miner, Falls City; E. L. MacQuiddy, Omaha; Roland R. Reed, McCook; B. Carl Russum, Omaha; C. C. Tomlinson, Omaha; C. A. Allenburger, Columbus; M. W. Barry, Omaha; A. E. Bennett, Omaha; R. Russell Best, Omaha; John A. Borghoff, Omaha; Floyd S. Clarke, Omaha; L. Elmer Frey, Lincoln; Howard B. Hamilton, Omaha; J. A. Henske, Omaha; J. Jay Keegan, Omaha; Charles R. Kennedy, Omaha; E. J. Kirk, Omaha; E. E. Koebbe, Columbus; H. J. Lehnhoff, Lincoln; Ralph Luikart, Omaha; E. C. McAleer, Peru; J. E. Meisenbach, Staplehurst; Donal H. Morgan, McCook; Frederick W. Niehaus, Omaha; George P. Pratt, Omaha; James E. M. Thomson. Lincoln; William T. Wildhaber, Beatrice.

DENTAL EDUCATIONAL COUNCIL OBJECTS

The Dental Educational Council of America objects to the statement made in the final report of the Commission on Medical Education that "dentistry should be developed *under* medical education."

Perhaps we are wrong, but it seems to us that the objection is akin to splitting of hairs. Dentistry is a part of medicine: it is a specialty in medicine. Nobody, we believe, wants to subjugate dentistry. Some years ago a noted Chicago physician told this writer that the pediatricians are taking themselves too d--d seriously. Perhaps this is what ails the dentists.

First Nudist—"Who sent you to this colony? Your doctor?"

Second Nudist—"No, my broker."

A PRACTICAL LESSON IN SKULL SURGERY

Brain and skull surgeons of today take themselves pretty seriously and the time spent on an operation is said to run into hours upon hours. They do wonderful work and save many lives. They pride themselves on their special training, but they have not learned a lesson from the raw such as the following:

A recent book, *"Deep Water"*, by a retired ship captain relates how he did his first surgery when a big Russian Finn fell striking on his head, denting his skull on top as if he had landed on a ring bolt, but not breaking the skin. The dent was 3 inches in diameter and half an inch deep. The man remained unconscious for hours and as the sailing vessel was 12 days out of Melbourne the author asked the captain's permission to try to relieve the patient. He had the ship carpenter make him a thin bowl 5 inches in diameter and 2 inches deep out of elm wood, with a hole in the bottom the diameter of a knitting needle. He took the temper out of a knitting needle, bent a quarter of an inch at a right angle and again tempered the needle. No drill being available he selected a gimlet. The hair was cut from the depression and for some inches around it. Condy's Fluid (permanganate of potassium solution) was used as an antiseptic on the scalp. When all was ready the Finn was still deeply unconscious.

Starting in the center of the dent, using very little pressure, he must have struck a crack in the skull for the gimlet at once took hold and began to pierce the bone. He frequently removed the gimlet and explored the opening made with the point of the knitting needle, to make sure he was still in bone. He finally got through the bone without penetrating the lining of the skull, "at least no ooze came out." Then, gently inserting the bent end of the needle he got "a firm grip under the dent" and passed the other end through the hole in the bowl which was lowered upside down on the skull. The projecting end of the needle was then bent at right angles. Two slender hardwood wedges had been provided and these were inserted under the bent part of the needle at opposite sides. As the wedges were driven together the needle began to rise, lifting the dent with it, but not enough; so one wedge was braced with the hammer and the "surgeon" gently tapped the other until the depression came flush with the rest of the skull. The work was so all-absorbing that the operator was startled when a voice said, "Vat the 'ell you do mit mein yed?" The patient had regained consciousness! More Condy's Fluid was put around the hole made and just then the operating "surgeon" fainted.

When they landed at Melbourne the port doctor told him he could have taken the needle out after the first twenty-four hours instead of leaving it until they arrived in port!

OUTSTANDING PIONEER OBSTETRIC EXPERIENCES

My first case of instrumental delivery occurred during my first year of practice. It was eight miles in the country in a sod house. I rode there on a pony carrying my instruments wrapped in a roll. The woman had been in labor twenty-seven hours. In pioneer homesteader days, physicians were called only if a woman could not deliver herself.

The external parts were swollen black and blue and a part of the caput succedaneum presenting looked lifeless and black. I had no difficulty in introducing the instruments—thanks to splendid instruction given in medical school on a manikin. The delivery was not easy, but was readily enough accomplished and brought forth a dead and macerated fetus.

My fee was fifteen dollars—and I am still waiting for it!

There lived in our town a man with a perfectly good name, but whose trousers were always bagging, the seat hanging down toward the knees, which suggested his cognomen of "Pants." Mrs. Pants was a dull woman, the mother of a number of children. He was a laborer and the family always lived in filth and abject poverty.

One day she went into labor and sent one of the children for a neighbor lady. When this lady arrived the child was born and she at once decided this was a case to share with the doctor, who lived nearby. Arriving, I found the bed broken down in the middle and the mother literally swimming in a pool of blood, waters, baby and secundines. She had on her everyday dress and on being questioned she stated she had no change of clothing, bedding or any baby clothes. The neighbor lady and my wife became the good samaritans, rustled outfits of baby clothes, bedding and clothing for the mother. The wash basin had a hole in the bottom. I brought basin and gauze and cotton from my office and did my duty by the mother. All went well afterward. (When they moved out of the little house some wags set fire to the house the following night to cremate the bedbugs!).

The World's Columbian Exposition occurred in Chicago in the summer of 1893. I had been in practice eleven years, by this time had a large clientele and was a busy man with all kinds of practice, including confinement cases.

I wanted to go to the World's Fair, but business kept me home all summer. The first days of October I had a series of confinements and I made up my mind rather suddenly that when this series was out of the way, I would slip off to Chicago.

A husband came in one evening and said—"Are you going to Chicago?" I told him I wanted to go and time was getting short as the fair would close early in November. He said his wife would be very much disappointed for they expected an heir any time. I questioned him as to time, but could get nothing definite. A neighbor lady who did some nursing had previously told me of this family's expectations but suggested appearances did not justify the expectations.

I slipped off to the fair about the sixth of October and came back nine days later and the first thing on returning asked my wife if the R's had a new baby. She had not heard of any. The expected baby arrived the next Fourth of July!

A rather plump, slightly obese young woman, mother of several children, called me to her farm home to attend her in confinement, her regular physician, resident of a neighboring town, being ill.

After the usual formalities and questioning as to case history, I made a bimanual examination and was surprised to a find a normal non-pregnant uterus. Questioned what I thought about the prospects I told her there was no evidence of pregnancy which apparently made her angry at me. She told me Dr. Blank had told her she was pregnant and when she might expect the birth of the child. I could not help it; neither could she and she never after was confined.

A husband brought his wife to me from a neighboring town to consult me, because they knew my parents in another part of the state. The woman was sure she was pregnant, could feel fetal movements, but her home doctor told her it was imagination. Not satisfied and hardly knowing what to do they decided to consult the doctor whose parents they knew. The bimanual examination proved the family doctor right. The waves in the abdominal muscles could be seen by a novice and she was unconvinced. I then told her that a way to prove the case was to give an anaesthetic and if pregnant the waves would continue; if nonpregnant, they would subside. She finally consented and the waves subsided.

One Wednesday morning—remember the day of the week—a physician from a neighboring town called me to meet him at a confinement case some miles in the country. Arriving he told me the trouble was that "it" would not come down. He said he had been called on Sunday morning, early, and had been at the bedside constantly since then and "it" had made no progress. He had been in constant attendance over three days and nights. Examining, bimanually, I found it to be a case of early, incomplete, miscarriage. With a dull curette we cleaned out the uterus—and all was well!

Before the advent of telephones and automobiles a confrere called at my house one night after the zero hour and asked me to go several miles in the country to assist him in a transverse presentation. He told me he had worked for hours and could not deliver because his hand cramped.

He further told me that in an effort to deliver he had amputated the arm of the child, which presented, in an endeavor to right to position. Further he stated that his chloroform gave out so he left the woman lying there in labor with a mutilated child and drove to town to get me and some chloroform.

Arriving at the house I said, "Doctor, what do you want me to do?" He replied that his hand was now better and if I would give the chloroform, he would try again to deliver. I gave the anaesthetic while he, with the woman across the bed, but not at the edge of the bed, made an effort to deliver. Soon, he said, "My hand is cramping again, you may try it." I brought the woman's hips to the edge of the bed, scrubbed my hands in lysol solution, introduced a hand, grasped a leg, did a podalic version and in ten minutes had the dead child delivered. I then irrigated the uterus, for I thought it needed some attention, and cleaned up the mess as best I could.

Some time later the husband came to pay the bill. I charged him twenty dollars. He objected, saying that in proportion to what the other doctor, who was there all night, charged him, this was too much. Irritated, I said if I could do in fifteen minutes what he could not do all night, I thought I was entitled to the amount asked.

He paid, and always after patronized the doctor of his first choice. I had not made a hit.

I was called to attend a lady in a neighboring territory, because of the illness of the family physician. She was a large woman and examination told me I had an unusual case, but I could not determine its exact nature. An unusual head presented and time showed no progress. I determined to apply forceps. There was a two year old child in the room and no amount of suggesting and ordering the child be taken out of the room, availed. I had to administer the chloroform myself. The child ran around to get to the mother, repeatedly, and finally knocked the chloroform bottle from the chair and broke it. I was out of chloroform! I applied forceps and they slipped, no matter how I applied them. I then determined to turn and deliver, which I did without any anaesthetic, brutal as it seemed.

The child was an acephalous monster and, of course, dead.

A young man rode up to my office early one morning and asked me to go some miles out to attend the hired girl at their house, saying she was in awful pain. Within recent weeks I had heard a rumor that placed me on guard. I questioned the messenger and apparently all he knew was that she had "an awful pain in the belly." Suggesting that perhaps she was in labor he said he did not know anything about it. Examination proved my guess correct. She asked me what was the matter and I suggested "Don't you know?" She said, "No, what is it?" I told her she was going to have a baby. She said, "How can that be?" I told her she must know. She insisted that if this were true it must have happened when she was asleep. To which I replied, "We will not discuss that."

Her pains, hard when I arrived, rapidly grew harder and finally almost unbearable, without any progress being noticable. I determined on an instrumental delivery. To go back a bit—the gossip I had heard about this matter was to the effect that it was not known who was to blame, a neighboring hired man, the man of the house, who was a gay widower, or the bashful son who came after me.

I suggested to the patient that we would have to help her and we must call in one of the men in the house and asked whether we should call father (the widower) or the son. After a long hesitation, she said, "Call the son." When my work began to assume a serious aspect he broke down and cried like a child. A living child was born. Just two weeks later there was a joint baptising and wedding. These people raised one of the finest and most worthwhile families in the settlement, and prospered.

—F. A. Long, Madison.

ALLERGY HINT VI

A history of food dislikes, or known disagreements, is of the greatest value in determining the offending agents in allergy.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT X

One ounce of rest is worth a ton of all other treatment put together. But rest is not always rest. Some patients may be lying down and yet using up more energy and be under more strain than when at work. The modern coal-tar hypnotics are harmless and of great assistance in securing proper mental and physical relaxation.

—Miles J. Breuer, Lincoln.

MEDICO-LEGAL DISABILITIES XII

In the consideration of an injury of a claimant which is directly or indirectly, the result of disease, wherein disease is claimed to have effected or contributed to the result of an injury by "accidental means," the disease must cooperate with the unforseen, unintended, unusual force if the disease is to be considered as a cause or a result.

—Czar Johnson, Lincoln.

EDITORIAL PARAGRAPHS

The American Public Health Association will meet at Indianapolis, October 9-12.

The Nebraska State Medical Journal — the medical magazine with a human touch!

The only type of cancer in the rectum is adenocarcinoma. Epithelioma occurs only at the anal margin.

New ads this month are Medical Protective Co., Merck & Co., R. B. Davis Co., S. H. Camp & Co., Tulane University Medical School and Chesterfield cigarettes.

The daily press recently told a little story that gave us the following impression: A chiropractor collapsed on the sidewalk—fainted. A medical doctor was called to attend him and adjusted him alright, alright!

The Wyoming State Medical Society meeting for 1933 has been abandoned. A joint tri-state meeting with Idaho and Utah at Yellowstone Park had been planned but the latter states withdrew from the arrangement a short time ago.

Definite assurance that the requested survey of Lincoln and Lancaster county health activities will be made by the U. S. public health service has been received in a letter from Hugh S. Cumming, surgeon-general of the Public Health Service.

The use of tea as a beverage dates to about the sixth century B. C., while authentic records date the use of coffee to the ninth century A. D. and cocoa is a child of the sixteenth century A. D. The coffee plant is indiginous to Arabia and Abyssinia and even in these countries it was not systematically cultivated until the fifteenth or sixteenth century.

A preliminary announcement and tentative program for the First Annual Assembly of the Omaha-Midwest Clinical Society, October 30-November 3, is at hand and indicates leadership and vision of the first order. Omaha can do things as this assembly will no doubt prove. Philadelphia, Baltimore, Chicago, St. Louis, Kansas City and Newark will furnish outside talent for the assembly.

The American Congress of Physical Therapy announces its twelfth annual scientific and clinical session which will be held September 11 to 15, 1933, at the Palmer House, Chicago. Physicians are urged to plan their vacations for this September session. The Century of Progress Exposition and this twelfth annual meeting of the Congress will make a week's stay in Chicago profitable and interesting.

We copy the following as a hot weather recipe: "It is perfectly obvious that any man can look well-dressed at little expense every day of his life. if he follows a few simple rules. These are: (1) a shave daily; (2) a haircut at least semi-monthly; (3) straight heels on shoes; (4) frequent shines; (5) clean necktie; (6) clean and well-blocked hat; (7) clean linen daily; (8) well-pressed suit. The secret of good appearance is cleanliness and neatness. Every man should cultivate them."

The Nebraska Department of Health furnished a summary of health examinations of school children of some interest:

Total School Districts	6,922
Total Reports Received	6,305
Pupils Enrolled	208,729
Pupils Examined	201,284
Pupils Without Defects	53,738
Defects:	
Eye	36,108
Ear	7,979
Nose	12,018
Throat	36,522
Teeth	97,336
Districts Examined by Physician	270
Districts Examined by Teacher	5,224

The National Committee for Mental Hygiene in a recent release makes the statement that "The general practitioner is in the first line of attack on ill health, and it is important that he should understand the psychiatric problems that occur in his everyday practice. A sharp line should not be drawn between the sphere of the general practitioner and the psychiatrist. The physician who is interested in the individual as a whole, and who is aware of the complexities of behavior, must judge for himself in each case if and when the services of the specialist in psychiatry are required. Some physicians by nature and training have more ability than others to deal with mental disorders. The aim is not to train psychiatrists as such during the medical course. It is an accepted principle that the psychiatrist must first of all be a physician, and most of his special training in psychiatry must be attained after he graduates from the medical school. At the same time it should not be possible for practitioners of medicine to regard themselves as specialists in this difficult field unless they have first obtained adequate practical experience and expert training up to approved standards. Such postgraduate training should be fostered, first of all, in the few universities where arrangements already exist for this work. Such centers should be strengthened and supported."

NECROLOGY

Charles E. Protzman, Lincoln, Nebr.; Lincoln Medical College, 1902; practitioner at Seward and Lincoln for thirty years; died July 9, 1933, following an attack of appendicitis, aged fifty-one years. A widow, son and daughter survive.

Carl G. Swenson, Chicago; Rush Medical College, 1801; assistant professor of surgery, Northwestern University Medical School, Chicago; began the study of medicine at Shelton, Nebr., under the tutelage of the late Dr. E. L. Smith; practitioner at Omaha two years following graduation; died in Chicago recently, aged about seventy-seven years.

EXIT NURSE

"Mummie, you're not nearly so pretty as Nurse."

"Don't you think so, dear?"

"No. We've been walking around the park for an hour and not a single soldier has kissed you."—The Humorist.

TUBERCULOSIS ABSTRACTS

Commemoration last year of the 50th anniversary of the discovery of the tubercle bacillus brought forth a number of excellent papers summarizing progress made in the fight against tuberculosis during the past half century. Among these Edgar Mayer of Saranac Lake, in his Robert Koch Lecture, reviewed critically the preventive and curative measures in tuberculosis since Koch. Our entire knowledge of infectious diseases and various related branches of learning rests upon the foundation which Koch established. It was he who devised methods which gave science the possibility of solving problems of immunity on an exact experimental basis and who taught the world how to transmit infectious diseases experimentally from animal to animal. Koch's great achievement is fittingly commemorated by recounting progress made since then. Excerpts of Dr. Mayer's paper follow.

PROGRESS IN TUBERCULOSIS CONTROL

Shortly after the staining of the tubercle bacillus had been described in the Berliner Klinische Wochenschrift Trudeau learned from Prudden the technique of identifying the organism. His interest aroused, Trudeau struggling with tuberculosis himself and already familiar with the methods of Brehmer and Dettweiler, founded the first American sanatorium at Saranac Lake.

Not long after the recognition of the bacillus came tuberculin with its rosy promise. While specific tuberculin treatment of pulmonary tuberculosis has proved disappointing tuberculin as a diagnostic procedure to reveal the presence of infection in human beings has become indispensable. The interpretation of the phenomena observed in the tuberculin reaction has brought in its wake numerous problems related to allergy and immunity such as the toxin-antitoxin theory, cellular immunity, the altered course of superinfections, fatal hypersensitiveness, etc. The mechanisms of immunity are all limited perhaps by time and degree, operating either in one phase to fix tubercle bacilli at points of reinfection and thus prevent or retard their spread, or at other times to fail in checking their growth and act destructively against the host. The mechanism of defense has to do also with specific bacteriolysins, monocytes and leucocytes, but little is as yet known about them. Immunity may be connected as much or more with the tuberculous tissue as with the living tubercle bacilli. Meantime, we must ask ourselves whether we really are imitating nature by aiming to retain hypersensitiveness. Should not desensitization, at least during certain stages of the disease, be our aim? Passive immunity measures have for the most part been disappointing and the workers in immunization have yet much to elucidate.

CONTROL MEASURES EFFECTIVE

Public-health measures, however, have succeeded gratifyingly. Sanitation, sputum disposal, registration of consumptives, segregation of patients in sanatoria, early diagnosis campaigns have contributed much to the control of tuberculosis. Pasteurization of milk and the tuberculin testing of cattle have undoubtedly helped to lower the tuberculosis mortality in our country.

The organized efforts now made for the detection of tuberculosis in children promise a continued drop in tuberculosis mortality. Such studies as have already been made indicate a 3 to 4 per cent incidence of childhood tuberculosis and 0.07 per cent of the adult form that would in part have been unrecognized. Perhaps 50 per cent of all adult tuberculosis develops from the cases of childhood tuberculosis. Children of tuberculous families are four times as likely to develop childhood tuberculosis as the noncontact children and twice as likely to have the adult type. Statistical studies are not yet sufficiently complete to permit the generalization that the existence of a previous infection in children either predisposes to, or protects them from, subsequent active disease.

VACCINATION ATTEMPTS

The status of BCG is still in controversy. Dissociation of BCG, as well as of avian cultures, into virulent types has been shown to occur in artificial culture media, but not in the human body. The dangers cited in the use of this method of prevention of tuberculosis in children must yet be substantiated. On the other hand, proof of a lasting immunity from its use is lacking and the many statistical studies are faulty. We cannot admit that the results of this prophylactic immunization, quoted as so favorable, have been proved. The use of dead tubercle bacilli (killed by heat) for producing hypersensitiveness and relative immunity that can be shown to last for from 12 to 18 months presents no risk; and its possibilities as a transient immunizing agent should make us hesitate to adopt such a generalized use of live bacilli as has been carried out abroad.

COLLAPSE THERAPY

Surgical measures of treatment intended to immobilize the lung have followed the conviction based on experience that rest and fresh air are still our sovereign remedies. The good results of pneumothorax treatment have overcome the former reluctance to apply active measures and have paved the way for more radical surgical methods in the treatment of tuberculosis.

It is possible that, in the past, operations have been used as a last resort in too many cases that were hopeless; and that on the other hand, many suitable cases that could have been saved have not been selected for surgical treatment.

Yet we have not yet taken sufficiently into account the pathological-anatomical nature of the tuberculous lesion nor the physiology and pathology of respiration and circulation. The treatment of advanced pulmonary tuberculosis is to a great extent the treatment of cavities, complete obliteration of which should be the ideal. The persistence of a cavity makes the prognosis grave. A more precise classification of cavities will help to define indications for treatment. The author describes various types of cavities, such as the early thin or elastic-walled of round or oval contour, the thick walled or rigid form, small multiple cavities or honeycombed in densely infiltrated areas; and comments on the indications for collapse treatment in each of these types.

THE SOIL

Aside from measures of direct attack upon the bacillus, advancement has been made also in our understanding of the soil of the host. Much work has been done to learn what factors of the actual disease can be produced chemically. Certain specific proteins and carbohydrates have proved to be toxic to tuberculous animals. The foodstuffs essential for the growth of the tubercle bacillus have been studied. A single bacillus has been isolated and its life cycle followed. Discoveries have been made which shed light on the role played by inorganic elements in nutrition. Precisely how calcium exerts its effects in tuberculosis, so much discussed in the past, has still to be revealed.

Whether calcium therapy in tuberculosis may play a part because of the chemical relationship of calcium to other ions and because of its pharmacological action, rather than as a basis of healing through depositions in caseous tissue, must receive some thought.

Much study also has been given to the effect of the lack of vitamins, coupled with which is the problem of light therapy. Without doubt light and fresh air affect body physiology and the patient's psychology, but exact explanations of the motive of action on the host as well as the definition of the effective spectral light regions cannot be clearly stated.

The effectiveness of the preventive and therapeutic measures applied during the past half century is reflected in the statistical reports indicating the great decrease in tuberculosis mortality in the past 30 years. Since 1900, figures in the United States show a lowering of mortality, from 195.2 per 100,000 to 67.2 per 1000,000 in 1930, and it is estimated that by 1937 the level of 40 per 100,000 will be reached in certain of the Northeastern states, unless the world-wide economic depression will interfere. However, the figures for the morbidity rate still remain at a high level, but are difficult of interpretation because of the constant improvement in means of early diagnosis and so forth. The rate of decline in mortality in middle- and old-age groups and in young male adults has continued, but the peak of mortality still remains in the group of young adult women. However, between the ages of fifteen and thirty-five years tuberculosis still remains the chief cause of death.

Preventive and Therapeutic Measures in Tuberculosis Since Koch, Edgar Mayer, Am. Rev. of Tuberc., June 1933.

GRADUATES CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, 1933, AND THEIR INTERNESHIP ASSIGNMENTS

Albers, T. E., St. Mary's Hospital, San Francisco.
Alexander, H., St. Joseph's Hospital, Sioux City.
Anderson, M. O.
Armington, R. E., St. Mark's Hospital, Salt Lake City.
Armstrong, C. W., St. Francis Hospital, Wichita, Kansas.
Bach, L. F., St. Francis Hospital, Wichita, Kansas.
Bergin, W. N., Queen's Hospital, Honolulu.
Blitz, D., Israel Zion Hospital, Brooklyn, N. Y.
Bloom, B., Robert B. Green Memorial Hospital, San Antonio, Texas.
Bohm, J. E., San Francisco City and County Hospital, San Francisco.
Brandner, B., Jersey City Hospital, Jersey City.
Cermak, E. C., Northern Pacific Hospital, Tacoma.
Chabanoff, Elizabeth, Douglas County Hospital, Omaha.
Crist, R. S., Providence Hospital, Seattle.
Crowley, F. L., Sacramento Hospital, Sacramento, Cal.
Darios, D. J., United States Public Health Service, San Francisco.
Doan, D. I., St. Joseph's Hospital, Omaha.
Donahue, E. S., United States Public Health Service, Baltimore.
Fellman, A., St. Joseph's Hospital, Omaha.
Fritz, W. H., St. JoJseph's Hospital, Omaha.
Gamet, E. E., Evangelical Covenant Hospital, Omaha.
Gatewood, J. W., Douglas County Hospital, Omaha.
Goldberg, I. S., St. Mary's Hospital, Waterbury, Conn.
Grady, E. M., Mercy Hospital, Council Bluffs, Ia.
Harrison, H. E., St. Joseph's Hospital, Omaha.
Havel, H. W., St. Catherine's Hosptal, Omaha.
Heffernan, C. E., St. Francis Hospital, Evanston, Ill.
Holden, W. J., St. JoJseph's Hospital, Tacoma.
Jones, Susan C., San Francisco City and County Hospital, San Francisco.
Joseph, R. E., St. Vincent's Hospital, Portland, Oregon.
Kasper, R. J., St. Elizabeth's Hospital, Lincoln, Nebr.
Keen, S. N., St. Francis Hospital, Jersey City, New Jersey.
Ketter, W. D., Mercy Hospital, Council Bluffs, Ia.
Kirlin, L. P., Mercy Hospital, Des Moines, Ia.
Kucera, S. T., St. Mary's Hospital, Minneapolis, Minn.
Lawler, A. L., St. Vincent's Hospital, Portland, Oregon.
Luff, G. J., Salt Lake General Hospital, Salt Lake City.
Loiacano, F. P.
McCarten, F. M., St. Joseph's Hospital, St. Paul, Minnesota.
McDonald, C. J., St. Alexis Hospital, Cleveland.
Maillett, L. L., St. Catherine's Hospital, Omaha.
Mailliard, R. E., St. Elizabeth's Hospital, Lincoln, Nebr.
Mullen, J. P., Mercy Hospital, Chicago.
Navin, K. W., St. Catherine's Hospital, Omaha.
Nesrsta, G. W., St. Joseph's Hospital, Omaha.
Nocero, M., Morrisania Hospital, New York.
O'Kane, L. D., St. Joseph's Hospital, Omaha.
O'Neil, G. C., St. Joseph's Hospital, Omaha.
O'Toole, A. J., St. Joseph's Hospital, Omaha.
Petersen, R. L., Lt. Med- Res. Reforestation Corps.
Plut, H. J., Providence Hospital, Seattle.
Prince, J. H., St. Elizabeth's Hospital, Dayton, Ohio.
Reichert, H. L., St. Elizabeth's Hospital, Dayton, Ohio.
Rethers, C. E., Southern Pacific Hospital, San Francisco.
Rosner, H., Unity Hospital, Brooklyn, N. Y.
Rossitto, A. F., Wichita Hospital, Wichita, Kansas.
Sass, L. C., St. Alexis Hospital, Cleveland.
Schaeffer, N.
Schultz, P. T., Long Island Hospital, Boston.
Seward, G. W., St. Catherine's Hospital, Omaha.
Shone, L. B., St. Joseph's Hospital, Omaha.
Shonka, T. E., Mercy Hospital, Council Bluffs, Ia.
Smith, L. A., St. Louis City and County Hospital, St. Louis.
Smith, T. T., St. Joseph's Hospital, Omaha.
Stager, W. R., St. Elizabeth's Hospital, Youngstown, Ohio.
Streigel, R. J., Sisters of Charity Hospital, Buffalo, N. Y.
Sturm, C. E., Santa Rosa Hospital, San Antonio, Texas.
Tanous, E. W., Alexian Brothers Hospital, Chicago, Ill.
Taylor, R. B., St. Luke's Hospital, San Francisco.
Tell, M., Beth-El Hospital Brooklyn, N. Y.
Triolo, A., St. Mary's Hospital, East St. Louis.
You, E. W., St. John's Hospital, Fargo, North Dakota.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE CLASS OF 1933 INTERNESHIPS

Andersen, Raymond R., Immanuel Hospital, Omaha.
Baker, Milan D., Temple University Hospital, Philadelphia, Pa.
Baker, Paul Q., University Hospital, Omaha.
Baker, William Y., Harbor View Hospital, Seattle.
Benbrook, Samuel P., California Hospital, Los Angeles.
Bigger, Ralph W., University Hospital, Omaha.
Black, Howard J., Southern Pacific Company, San Francisco.
Casebeer, Harvey L., University Hospital, Oklahoma City, Okla.

Chaloupka, Howard M., Ancker Hospital, St. Paul, Minnesota.

Clements, John H., Omaha Methodist Hospital, Omaha.

Coates, Elmer T., St. Margaret Memorial Hospital, Pittsburgh, Pa.

Cone, Carl B., Good Samaritan Hospital, Portland, Oregon.

Cowen, Joseph M., Jennie Edmundson Hospital, Council Bluffs, Ia.

Davis, E. Valentine, Douglas County Hospital, Omaha.

Duey, Harold A., University Hospital, Omaha.

Ellis, Coburn H., Ahwahnee Sanatarium, Ahwahnee, California.

Fechner, Albert H., Bryan Memorial Hospital, Lincoln, Nebraska.

Feind, Earl E., Missouri Pacific, Little Rock, Ark.

Garrison, Everett J., Bell Memorial Hospital, Kansas City, Kans.

Gilliland, Frank I., Long Island College Hospital, Brooklyn, N. Y.

Grace, Kenneth D., Grady Memorial Hospital, Atlanta, Georgia.

Greene, Arthur M., Michael Reese Hospital, Chicago, Ill.

Hager, Chauncey A., St. Francis Hospital, Jersey City, New Jersey.

Haller, Austin P., Bethany Methodist Hospital, Kansas City, Kans.

Haller, William M.

Hawkins, Orlando J., Emanuel Hospital, Portland, Oregon.

Heald, John O., West Suburban Hospital, Oak Park, Ill.

Heine, Lyman H., Akron City Hospital, Akron, Ohio.

Hrdlicka, George R., Jennie Edmundson Hospital, Council Bluffs, Ia.

Hubner, Roland F., Ancker Hospital, St. Paul, Minn.

Huntley, Leslie L., Nebraska Methodist Hospital, Omaha.

Jakeman, Harry A., University Hospital, Omaha.

Jensen, Marshall N., Parkland Hospital, Dallas, Texas.

Jewell, Leo E., University Hospital, Omaha.

Johnson, Harald N., Peter Bent Brigham Hospital, Boston, Mass.

Kahn, Edwin M., St. Louis City Hospital, St. Louis, Missouri.

King, Boyd G., Lakeside Memorial Hospital, Cleveland Ohio.

Kirk, Ronald F., Mercy Hospital, Denver, Colorado.

Krause, Richard A., St. Francis, Evanston, Illinois.

Krotcher, Lester C., Immanuel Hospital, Portland, Oregon.

Lawrence, Joseph C., University Hospital, Omaha.

Loder, Leonel L., University Hospital, Omaha.

Luppens, Albert F., Trinity Lutheran Hospital, Kansas City, Missouri.

McCarthy, John J., St. Paul Hospital, Dallas, Tex.

McClatchey, Warren S., Mercy Hospital, Cedar Rapids, Iowa.

McConnell, Pauline R., Los Angeles County, Los Angeles.

Meeske, F. Lloyd, Bishop Clarkson Hospital, Omaha.

Miller, John K., Memorial Hospital, New York City.

Pennoyer, Willard H., University Hospital, Omaha.

Peterson, Stanley W., Emanuel Hospital, Portland, Oregon.

Ralston, Robert J., Nebraska Methodist Hospital, Omaha.

Rehder, Roy C., Columbia Hospital, Milwaukee, Wisconsin.

Reitz, Percy A., Parkland Hospital, Dallas, Texas.

Raynolds, Verne J., St. Francis Hospital, Jersey City, New Jersey.

Roadruck, R. Davis, St. Luke's Hospital, Denver, Colorado.

Rogers, Curtis L., St. Luke's Hospital, Duluth, Minnesota.

Sanders, Theodore E., Nebraska Methodist Hospital, Omaha.

Schultz, Jacob F., University Hospital, Iowa City, Iowa.

Sears, Lucien, Fairview Hospital, Minneapolis, Minnesota.

Shoemaker, Norman C., Sibley Memorial Hospital, Washington, D. C.

Simecek, Angeline F., New York Infirmary for Women and Children, New York City.

Simecek, Victor H., St. Francis Hospital, Jersey City, New Jersey.

Smith, Fay, University Hospital, Omaha.

Swanson, Eldon C., Immanuel Hospital, Omaha.

Thomas, Gerald F., Swedish Hospital, Seattle.

Toohey, Clarence J.

Ure, William G., University Hospital, Ann Arbor, Michigan.

Waterman, John, Douglas County Hospital, Omaha.

Williams, Hugh H., Covenant Hospital, Omaha.

Williams, Martin P., Immanuel Hospital, Omaha.

Witte, C. Norman, Fitkin Memorial Hospital, Neptune, New Jersey.

Womble, Leigh H., University Hospital, Omaha.

THE SOCIETIES

The Eleventh Councilor District Medical Society was organized at North Platte, July 1, with Dr. C. W. Selby, president, and Dr. H. H. Walker secretary-treasurer. Plans are being made for a fall meeting.

The Richardson County Medical Society meeting was held at Humboldt June 22 with a dinner at the Park hotel. Dr. Deaver of Sabetha, Kansas, read a most interesting paper on, "The Doctor in Politics and Literature." Dr. Waggener gave an interesting paper on "His Observations during his fifty-seven years of practice." The doctor can relate very interesting stories of the hardships and the crude methods used in the early days.

The Sixth Councilor District Medical Society held a meeting at Milford June 27 with the following program: Allergy, Geo. Underwood, M. D., Lincoln, Neb.; Surgical Subject, J. Stanley Welch, M. D., Lincoln, Neb.

HUMAN INTEREST TALES

Dr. Randolph Tibbels has located at Oakland.

Dr. Workman, of Omaha, has located at Curtis.

Dr. A. C. Burnham, young physician, has located at Oconto.

Dr. D. P. Wiens, Peoria, Ill., visited friends at Bradshaw in June.

Dr. I. C. Wood, Omaha, retired physician, is reported seriously ill.

Dr. H. S. Heim, formerly in mission service, has located in Humboldt.

Dr. Arthur W. Abts, formerly of Humboldt, has located at Humphrey.

Dr. W. H. Stubblefield, formerly of Ogden, Utah, has located at Ruskin.

Dr. H. I. Stubblefield, formerly of Ogden, Utah, has located at Ruskin.

Dr. A. N. Anderson, for some years at Belvedere, has located at Shickley.

Dr. Harley S. Eklund has become associated with Dr. D. J. Smith, Osceola.

Dr. L. W. Bowman, Alliance, suffered a great loss in the recent death of his wife.

Dr. and Mrs. A. E. Stuart, Cedar Bluffs, are spending several weeks in Colorado.

The Warren Memorial hospital at Friend has been opened by the Good Samaritans.

Dr. Leo J. Homback, for some time in practice at Norfolk, has located at North Platte.

Dr. and Mrs. R. B. Campbell, Franklin, recently visited their daughters at Glendale, Calif.

Dr. R. L. Callison, who recently completed an interneship in Omaha, has located at Potter.

Dr. Ellis E. Baker, formerly of Omaha, has become associated with Dr. S. A. Swensen, Oakland.

Dr. Carroll Mullen, Philadelphia surgeon, former Omahan, visited in the latter city recently.

Dr. and Mrs. Adolph Sachs and daughter, Omaha, have gone to Europe for a two months' trip.

Dr. V. V. Vance, Peru, sustained serious but not alarming injuries in an auto accident in June.

Dr. H. W. Orr, Lincoln, spoke before the local Kiwanis club, on the Underprivileged Child, recently.

Dr. and Mrs. C. W. Way, Wahoo, enjoyed a motor trip through Wyoming, Idaho and Colorado in June.

Dr. F. G. Vosika, Clarkson, underwent an operation recently and is reported well on the way to recovery.

Dr. and Mrs. Isaiah Haughey, Fort Collins, Colo., visited friends at Aurora, their former home, in July.

The marriage of Dr. H. Jakeman and Miss Janet Winter, Wahoo, is announced. They will live in Omaha.

Dr. S. A. Osheroff, after taking a year's special work in obstetrics and gynecology, has located in Omaha.

Dr. J. J. Keegan, Omaha, has become head of the department of surgery of the University College of Medicine.

Dr. Edgar Roy Brigham, and wife, Dinuba, Calif., visited with the Dr. A. L. Black family at Wood River, in June.

Dr. Paul Thorough of Omaha and Miss Margaret Cunningham of Schuyler were married June 17. They will reside at Cook.

Dr. Thos. H. Long and family, Tacoma, visited relatives at Madison, Omaha and other eastern Nebraska points, in June.

Announcement is made of the recent marriage of Dr. J. North Evans, Columbus, and Miss Roberta Prince, Grand Island.

Dr. I. H. Dillon, Topeka, and Mrs. Dillon, spent a short time visiting at Auburn, where the doctor formerly was in practice.

Dr. and Mrs. H. W. Benson, Oakland, spent a week recently at Estes Park, the guests of a Philadelphia friend, Dr. Carl Kelsey.

Dr. L. T. Gant, Rushville, and Miss Virginia Hassler, Omaha, were married June 15. Until recently Mr. Gant was located at Creston.

Dr. Floyd Kinyoun has become commissioner of health of the city of Omaha and Dr. Millard Langfeld has been named health director.

Dr. C. J. Schramek, medical director of the Douglas County hospital, has on the death of the superintendent also become superintendent of the institution.

Dr. Hamilton Morrow, having completed his interneship, will become associated with his father, Dr. H. N. Morrow, Fremont, in the practice of medicine.

Dr. Lamont Whittier, McCook boy, but lately of New York City, has become associated with Dr. Theodore Peterson, Holdrege, in the practice of medicine.

Dr. A. J. Schweehelm who left Creighton last fall to take a course in surgery at Philadelphia, has accepted a position as house surgeon in a hospital at Nashville, Tenn.

Dr. H. W. Orr went to Dublin last month to give an address before the British Medical Association at Dublin. He also attended the International Orthopedic Association meeting at London.

Dr. R. H. Slocumb, for several years in practice in Los Angeles, has returned to his former practice at Madrid, while Dr. A. T. Robertson, whose interests were sold to Dr. Slocumb, will take postgraduate work in Chicago.

The Journal is pleased to announce that Dr. Clyde Roeder of Omaha is making a complete recovery from a nervous breakdown induced by overwork. He is at present at Carpinteria, California, and Mrs. Roeder and the daughter are with him.

Mrs. R. S. Johnston, 43, wife of a prominent Kearney doctor, was fatally injured, and her daughter, Margaret, 13, badly injured two miles south of Sidney, June 28, when the automobile Mrs. Johnston was driving got out of control and overturned. Dr. Johnston and two other daughters were following in another car and witnessed the crash. The sympathies of the profession go out to the stricken family.

BOOK REVIEWS

FRACTURES, by Paul B. Magnuson, M. D., Associate Professor of Surgery, Northwestern University Medical School, Chicago. 466 pages, 8 mo., 317 illustrations. Cloth cover. Price $5.00. Published by the J. B. Lippincott Co., Philadelphia.

Dr. Magnuson has written a concise and practical book on fractures which should be of great value to the general practitioner. It embraces the method of production, the emergency care, the diagnoisis, the anatomy and treatment on a physiological basis of all kinds of fractures with special regard to the restoration of function after injury.

The book is very comprehensive, and detailed discussions are given of even the less severe fractures. Throughout the entire volume an effort has been made to simplify the methods of treatment for the physician who does not have at his disposal special fracture equipment. Operative procedures are briefly mentioned for use in those cases in which manual treatment is not adequate, or fails. The author tends toward direct mechanical fixation of the fracture fragments resorting to wiring, bone graft and other operative measures when necessary. Skeletal traction and fixation is too briefly mentioned for such an important aid in modern fracture treatment.

The book is well illustrated and shows many fracture retention devices which are original with the author. There are excellent chapters on fractures of the spine and of the skull giving up-to-date and accepted methods for treatment of these injuries. Of special interest to the general practitioner is the last chapter dealing with physical therapy in treatment of fractures, an aid to mobilization which is too frequently neglected. Although not written for a text, this volume should be a valuable addition to the library of the medical student.

—Fritz Teal, Lincoln.

"DER ARZT ALS FUEHRER DER NEUZEIT" (perhaps, liberally translated, "The Physician as Leader in the New Era), by Julius Lingenfelder, M. D., 8 mo., 158 pages. Paper cover. Published by the B. Westermann Co., Inc., New York City. Price 75c.

This is a philosophical dissertation on various phases of economics, by a former pratitioner at West Point, Pierce and Norfolk, now resident of St. Louis.

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THE IRRITABLE OR UNSTABLE COLON*

H. L. BOCKUS, M. D., and J. H. WILLARD, M. D.,
Philadelphia, Pa.

IN TWO PARTS—PART ONE

The term "irritable"(1) or "unstable" colon is frequently applied to colon dysfunction dependent upon some disturbance of the neuromuscular mechanism of the bowel sufficient to give rise to subjective symptoms but unassociated with colonic inflammation or disease. This diagnosis is preferable to the designation "colitis", a term which should be reserved for cases of actual inflammation of the colon either catarrhal or ulcerative. Further justification for the use of these terms lies in the extreme difficulty in classifying states of functional abnormality in the colon because of the presence of apparent atony and spasm in the same bowel at the same time or different times. The majority of cases which are now included in this grouping were previously labeled spastic colitis or spastic colon and mucous colitis. In most instances increased tonus and shortening of the circular or longitudinal muscle fibres of the bowel or so-called spasm is responsible for symptoms. However, this may not be obvious in some, the bowel films suggesting extreme atony. Careful study and necropsy in cases of apparent atony may reveal a hypertrophy of the rectosigmoidal sphincter and a thickening of the bowel musculature suggesting that the increased size of the bowel has actually resulted from overwork in attempting to overcome a hypertonic zonal spasm, (Martin and Burden)(2). However, we do not include all cases of large dilated colon in this group, as most types of extreme megacolon occurring in late life are of gradual development following a simple dyschesia usually from neglect of bowel hygiene. There likewise seems to be no reason for including all cases of constipation with abdominal symptoms in this grouping. The colon irritability and symptoms arising therefrom are frequently dependent upon a catarrahl colitis induced by the habitual use of laxatives and "colon flushes" over a period of years. If the constipation has antidated the abdominal symptoms for years and symptoms have developed only after laxatives and enemas have been used we would exclude such cases from the group of primary irritability of the colon. Cases previously designated as neurogenic mucous colitis belong in the "irritable" colon family. The underlying cause seems to be an instability of the autonomic nervous system. Spastic motor phenomena undoubtedly account for the cyclic symptoms so commonly present, although the most prominent symptom may be discharge of clear mucus from the bowel(3).

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

So-called anomalies of the colon, so well oriented by Kantor(4), will add confusion to any attempt at classification of the functional disturbances of the colon. It is difficult or often impossible to decide to what extent redundancy or malposition of the colon may be responsible for colonic symptoms. If the anomaly is extreme and the state of irritability insignificant and the nervous factor seems relatively unimportant, we would exclude these cases from this category of "irritable" colon. For purposes of classification and statistical analysis we reserve the term "irritable" or unstable colon to those cases in which the history, symptoms, roentgen study, sigmoidoscopy and follow-up suggests a primary state of irritability for which there is no apparent cause, such as intracolonic disease or inflammation, intestinal parasites, anomalies, or extracolonic pathology capable of causing reflex symptoms.

ETIOLOGY

With this brief introduction concerned with the type of colonic disturbances which may be justly included in the category of "irritable" or "unstable" colon we may proceed to an even more difficult task, that of attempting a discussion of the mechanism responsible for these states of colon dysfunction.

Many feel that this condition represents a true example of a "civilization" disorder. It is not commonly encountered in those members of the human family who still cohabit with nature. The pure negro rarely suffers from this ailment, but the highly civilized Jew frequently does. It is said to occur less frequently in those countries where the pace of living is not so fast and is more prevalent in urban than in rural communities. Some authors feel that its incidence is greater among private than in dispensary patients. The history of precipitation of attacks by various types of nervous or psychic trauma is a striking clinical feature. A holiday, particularly in the out-of-doors, or a change of environment, results frequently in a complete amelioration of symptoms. Considering the many demands which the pace of civilization makes upon our nervous systems it is not strange that the "irritable" colon syndrome is becoming more and more common. Environmental factors may be looked upon as immediate or exciting causes of individual attacks. Platitudinously, of the many individuals exposed to the same type of stress and strain only a few will develop the "unstable" colon syndrome. An hereditary tendency seems important. Carefully taken family histories will reveal a surprisingly high incidence of similar complaints in the preceding generation. In our experience a racial tendency has been found among the Jews and southern European races. A review of case records reveals the frequent occurrence of such terms as "emotional", "tense", "high pressure", "apprehensive", "neurasthenic", "conscientious" and "introspective" to describe the type of individual.

There can be no question of the important role played by mental disturbances in the etiology of the "irritable" colon syndrome but the basic underlying cause is an instability of the neuromuscular bowel mechanism over which the autonomic nervous system presides. That this mechanism may be faulty without any mental or emotional aberrations is obvious. Symptoms suggesting vegetative nervous system imbalance are commonly present. The more frequent are undue dryness or oiliness of the integument, disturbances of heart rate and rhythm, cold extremities, disturbed pharyngeal reflexes, disturbances of tone of the gastro-intestinal sphincters, dermographism, erythema, changes in the size of the pupils and hyperidrosis. This mechanism is quite easily upset by the central nervous system influences, such as grief, emotional disturbance, fright and worry. Any of these factors may so disturb the delicately balanced vegetative mechanism as to cause a condition which has been subliminal to be brought into the realm of consciousness. The present feeling seems to be that the autonomic disturbance is primarily the result of some type of dysfunction of the endocrine glands. Both hyper and hypothyroidism are commonly associated with marked instability of the colonic neuromuscular mechanism although only a very small group of cases of irritable colon can be ascribed to this cause. The influence of the ovaries is manifestly important in some and a definite relationship of colonic symptoms to puberty, menstruation and the menopause may be present. Many of the female patients with the "irritable" colon syndrome likewise suffer with menstrual disorders. That other less manifest endocrinopathies may play an important part in vegetative instability there can be little doubt. One does not wonder that these little dynamos (endocrine glands) and their transmission lines (autonomic nervous system) get out of kelter when one considers the many demands which are made upon them to keep up a steady flow of energy exchange in spite of rapidly changing external influences necessitated by modern life.

In some instances an allergic state may be of importance in initiating attacks. It should always be considered when the patient or family is known to be allergic. Dorst(5) feels that mucous colitis may be due to a sensitivity of the individual to his own bowel bacteria and this factor may account for some cases of bowel irritability without an associated mucous colitis.

SURVEY OF CASES

Incidence.—For purposes of discussion 50 cases have been reviewed. It would have been just as easy to select one hundred or 500 cases. They are numerous enough but the task of computation would be infinitely more laborious and it is doubtful if an analysis of a larger series would throw any additional light on the subject. In order to determine the incidence of the condition 926 consecutive office records were reviewed. A diagnosis of "irritable" colon was made in 18 per cent. From the total of 926 cases reviewed a diagnosis of colon stasis was made 528 times. The colon stasis was considered to be the reason for seeking medical advice in 349 and a subsidiary or corollary complaint in 179. The cause of the colon stasis was thought to be primary "irritability" in 30.4 per cent of cases. The significance of these statistics is the very high incidence (64.9 per cent) of colon stasis and the rather frequent occurence (18 per cent) of "irritable" colon in patients consulting the gastroenterological internist. The latter figure is exceedingly conservative due to the care with which these cases were selected, always excluding those without abdominal symptoms or with any other possible cause for such symptoms.

Age.—This analysis reveals a decided tendency for the condition to occur during young adult and middle life. Forty-three cases or 86 per cent occurred between the age of twenty and fifty years. Eleven patients were under thirty years of age, fifteen between thirty-one and forty, seventeen between forty-one and fifty. Only 7 cases were over fifty years of age.

Sex.—Twenty-nine of the patients were females, an incidence of 58 per cent. The cases were more evenly distributed between sexes than in most other series recorded.

Symptoms: The history of abdominal complaints and of colonic dysfunction is usually long. The duration of symptoms was two months or less in only 6 cases and under one year in but seven additional cases. The remainder with few exceptions gave a history of intermittent abdominal complaints for many years. Abdominal discomfort of some type is the outstanding symptom. Pain was present in 48 cases. It was described as crampy or griping in twenty or 42 per cent and as a pressure or ache in a similar number. Six patients had both the aching pain and crampy sensations and two described the sensation as flatulence. Twenty-five patients had spells of abdominal distention from time to time and six patients described sensations of gas movements or borborygmi. A very significant point in the history is the relief afforded by defecation, expulsion of flatus, or the taking of an enema. Thirty-three patients or 66 per cent gave such a story. The situation of the pain or discomfort in these cases is of interest. It was migratory, general over the abdomen or involving two or more quadrants in 20 cases. In 11 cases it was confined to the epigastrium. The epigastric discomfort was assumably due to the pressure of gas in the colon either upon the stomach or diaphragm or upon the abdominal parietes. The pain was described as upper abdominal by four patients (8 per cent). In the remainder it was located in the lower abdomen, often in the lower left quadrant. In seven patients (14 per cent) symptoms at times were severe enough to bring about a state of total incapacity for varying periods of time. This is mentioned to emphasize the relative severity of symptoms which may occur in some individuals with the so-called "irritable colon" syndrome.

Colonic dysfunction manifested by constipation, diarrhea, alternating constipation and diarrhea, departure from the normal shape and consistency of the stools or excessive mucus discharge or varying combinations of these abnormalities was noted in every case. Constipation was a major complaint in 20 cases, diarrhea in eight and alternating constipation and diarrhea in 16 cases. Diarrhea occurred at some time during the course of the illness in 48 per cent of cases. An excessive quantity of mucus was noted in the stools in 21 cases (42 per cent). Discharge of mucus from the bowel was the chief complaint in 1 case. The shape of the stools when formed was scybalous in 11 cases, narrow cylindrical in 12 cases, either one or the other type in 12 cases, and that of a flat cylinder in 1 case. The formed stools were of abnormal shape in 72 per cent of cases. It can be readily seen that one of the significant findings in this condition is a consistent and decided departure from the normal shape and consistency of the stools.

Concomitant Symptoms: The incidence of certain symptoms which might be of toxic or reflex origin are encountered sufficiently often to justify mentioning. A complaint of dizziness or vertigo was elicited from eight patients, of headache from thirteen patients, of nausea or vomiting from eight patients. Fatigue will be discussed below. We should like to stress particularly the occurrence of an epigastric syndrome having a rhythm not distinguishable from duodenal ulcer in fourteen patients or 28 per cent of the series. Only half of this subgroup had a gastric hyperacidity and in most cases it was slight. A definite roentgen defect suggesting ulcer was present in only 2 cases. Although we have reason to believe that duodenal ulcer and irritable colon symptoms frequently occur in the same type of individual, the individuals with duodenal ulcer were not included in this series unless the irritable colon syndrome occurred independently of and at a different time than the period of activation of the ulcer. However, the observation that pyloro-duodenal and colonic irritability are apt to be present in the same individual is of significance, pointing toward an underlying disturbance of the autonomic nervous system.

Relation of Occurrence of Attacks to Extraneous Influences.—A striking clinical feature of many cases of irritable colon is the close relationship between the state of nervous equilibrium and colonic function. In going over the records it was found that nervous strain, trauma, or a bout of emotionalism were instrumental in precipitating an attack in 43 cases. Thus it is seen that in 86 per cent of cases this factor of nervous trauma of some type played an important role in initiating upsets. The importance of this nervous factor is further emphasized by the fact that a change of environment or holiday from home brought about an amelioration of symptoms in 7 cases or 14 per cent. Several patients in our series experienced relief of symptoms after overindulgence in alcohol, apparently because of the complete mental relaxation so brought about. Being especially interested in the importance of this so-called nervous factor an attempt was made to classify these patients as phlegmatic or tense and emotional types. In 49 cases or 98 per cent some mention was made in the case history of the patient being tense, high-pressure, energetic or highly emotional. This is striking but, of course, is what one would anticipate since the group only included patients who did not show other evidence of organic disease. Obviously the personal equation enters largely into any size-up of this sort concerned with an attempt to classify the type of individual nervous constitution with which one is dealing.

A second factor of importance in the initiation of attacks is fatigue or physical exhaustion induced by "over-doing". A history of bowel disturbance following fatigue was noted in 18 cases or 36 per cent. It should be borne in mind that as a class these patients have decidedly less reserve strength than the average individual of like age and sex. That neoromuscular instability of the colon is in some instances and in some fashion dependent upon ovarian function is suggested by obtaining a history from 8 patients of initiation of symptoms at the menopause. In three other patients symptoms often recurred just before or during menstruation. Attacks may be induced by reflex colon irritability due to disease elsewhere in the abdomen. A siege of bowel symptoms in one case followed an attack of renal colic. During a period of bowel irritability cellulose fibre in the diet often accentuates symptoms. In three of these cases definite bouts of discomfort and bowel dysfunction were actually induced by eating roughage. Other exciting causes which may be responsible for precipitation of an attack are excessive use of tobacco, exposure to inclement weather or any other influence which may account for lowering the patient's general tissue resistance. Attacks of irritable colon in a susceptible individual can frequently be attributed to various types of colon therapy directed toward relief of constipation, such as irritating laxatives, medicinal enemas and colonic irrigations or flushings. Cases of constipation thought not to be of nervous origin have been excluded from this series so that the incidence of laxative habit is not as great as in cases of colonic stasis generally. Nineteen cases or 38 per cent were addicted to the frequent use of laxatives. Only thirteen patients used enemas or irrigations and then only ocasionally, usually for the relief of abdominal symptoms.

Physical Findings: That the irritable colon syndrome occurs in patients of all constitutional types is evidenced by a classification of twenty-four patients in this series as belonging to the habitus asthenicus, sixteen as habitus sthenicus and ten as habitus hypersthenicus. During an attack that portion of the pelvic colon which is palpable is frequently felt as a tense firm rather thin sausage. In 60 per cent of cases the note made at the time of first examination indicated the presence of a spastic or tense type of pelvic colon. In 17 cases or 34 per cent tenderness was present over this segment of the colon. If an examination is performed during an attack the firmness and tenderness of the colon may not differ materially from that found in certain cases of ulcerative colitis.

This group of fifty patients with unstable colons was entirely free from organic cadiovascular disease. In 11 cases or 22 per cent a decided tendency to hypotension was noted. Only those cases in which the systolic pressure was 25 points below the anticipated normal for the age are so classified. Only one patient in the group had a slight hypertension, a young man 29 years of age with a pressure of 156 systolic and 98 diastolic. The blood pressure was normal in the remainder.

Sigmoidoscopy: This examination is of the greatest importance in all cases with symptoms suggesting disease or functional derangement of the colon. It is the only method of definitely ascertaining the existence of disease of the mucous membrane of the lower end of the bowel. The most significant finding in patients with irritable colon is an extreme degree of spasm of the sigmoid segment. The bowel is either found to be spastic with the first introduction of the instrument or the slightest movement of the sigmoidoscope induces a spastic response. In 33 cases (66 per cent) the notes dictated after sigmoidoscopy make mention of undue spasm of the rectosigmoid or sigmoid. In eleven of these cases the spasm was so marked that it was impossibel to pass the instrument into the sigmoid portion of the bowel at the time of first examination. A very significant finding when present is the reproduction of abdominal discomfort quite similar to the patients' subjective abdominal pain by the simple passage of the instrument or inflation of the sigmoid with air injected through the sigmoidoscope. This occurred in ten cases or 20 per cent of the series. These patients with irritable colon are the most difficult types upon which to perform sigmoidoscopy because of spastic narrowing of the bowel, apprehension during the examination and severe pain experienced during the procedure. In the absence of mucosal disease these findings are of considerable diagnostic importance.

Roentgen Findings: Ideally, the colon should be studied after barium is administered by mouth as well as following the injection of barium by rectum, and in doubtful cases supplemented by the double contrast barium and air enema method. Obviously such a complete study is not practiced in many instances for economic reasons. The least expensive and most informative method of studying the colon is after the introduction of an opaque enema. This procedure is of most value in eliminating organic lesions of the colon but an interpretation of the exact functional habits of the large intestine by this method may be misleading. However, an experienced roentgenologist can correctly interpret abnormalities of tone and motility quite accurately if the procedure followed is always identical.

The opaque enema should be introduced very slowly at body temperature and its rate of flow into the colon noted. In some cases of irritable colon just as in ulcerative colitis, but usually to a lesser degree, the barium will be observed to pass up the lumen of the colon very rapidly. This is an indication of extreme irritability. Just as during sigmoidoscopy, the introduction of barium, even when given properly, may produce subjective pain quite similar to the abdominal pain for which a physician's aid was sought. The importance of this observation can be better appreciated by the fact that seventeen patients of this group experienced severe pain during the introduction of the enema, in many instances quite similar to one of the major symptoms of the patient.

The silhouette of the filled colon in patients with the irritable-colon syndrome will obviously be quite variable in different cases, and not infrequently change considerably from time to time in the same patient. It can be markedly changed by the addition of more barium or the expulsion of some of the barium contents into the ileum. Filming the colon filled lying down and after evacuation standing gives additional information in some cases. The films taken after evacuation may show a string-sign suggestive of mucus or a pattern indicating polyposis or diverticulosis, which was not visible on the filled colon film. Bearing in mind the possibility of variatoin in the colonic silhouette depending upon the degree of distention of the bowel with barium, an inspection of a series of films in fifty cases of irritable colon revealed certain variations from the normal in many instances. Abnormal narrowing of some segment of the colon was noted in thirty-one cases. It was present in a large part of the left colon in twenty, in the sigmoid segment alone in eight, and in the entire colon in three cases. In eleven of the cases showing some degree of narrowing of the left colon or sigmoid, varying degrees of dilatation of the ascending colon were noted. Another less common phenomenon was segmentive or zonal spasm. It was extreme and confined to the sigmoid in 10 cases. Lesser degrees of zonal spasm were noted in the sigmoid in thirteen additional cases. Areas of spasm were noted in various parts of the left and transverse colon in six others. Extreme degrees of zonal spasm confined to the cecum or ascending colon were rarely encountered. In our experience a deep-cutting contracture of spastic nature confined to the proximal ascending colon is usually dependent upon some types of local disease in the vicinity, such as tuberculosis, malignancy, appendicitis or some type of mucosal disease. A considerable number of cases showed the fine shallow irregularly arranged saw-tooth type of colonic margin described by Spriggs and Marxer(6) as prediverticulosis. In six cases it was confined to the sigmoid, in one to the transverse colon and in eight cases it was present throughout the lêft colon. Actual diverticula were present in three instances. When signs of excessive irritability of the colon are noted in conjunction with diverticulosis, one can only conjecture as to which process is cause and which effect. We feel that the neuromuscular abnormality of the colon is probably primary, predisposing to the formation of diverticula as most cases of diverticulosis seem to occur in patients of nervous constitution. In one case in this series extreme dilatation of the entire colon was encountered and it was so classified here because the history and symptomology suggested a primary neuromuscular colonic instability. We suspect that most colons of this type are not primarily "irritable", feeling rather that the dilatation occurs as an aftermath of extreme constipation of years standing.

In many cases long segments of colon instead of showing normal or deep haustral contractions present a picture of absent or very shallow haustrations which cannot be differentiated from areas of ulcerative colitis. We have seen in a few instances all of the classical and so-called pathognomonic signs of ulcerative colitis. namely shortening, narrowing and lack of haustrations in cases of simple irritability of the colon. This appearance is rarely permanent unless due to an actual inflammation of the colon. If due to irritability the same colon may show deep cutting haustral contractions on the 24 or 48 hour mouth-meal films, indicating that the smooth effect on the enema film is not the result of actual disease. As one would anticipate, colons of all lengths were encountered in the series. Seventeen were classified as long, seven as short, and the remainder as of normal length. In eighteen cases redundancy of some part of the colon was considered to be quite marked. A considerable degree of coloptosis was noted in thirteen cases.

(To be continued)

THE POST-PARTUM CERVIX

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Inspection of the cervix immediately after delivery reveals a massive organ hanging loosely in the upper vagina, with the consistency and color of a piece of liver. The anterior and posterior margins are heavy and thick, while the lateral zones are markedly thinned out. Bruised throughout and lacerated in hundreds of places, with exposure of blood vessels and lymphatics, the wonder of it all is that the results are not worse.

Visible lacerations when present are usually in the thin lateral walls of the cervix. For convenience, these lacerations may be divided according to their extent. First degree, is used to designate those involving the mucosa only; second degree those involving the body of the cervix; and third degree those extending beyond the cervix into the vaginal vault and broad ligament.

Unless there is marked bleeding after the placenta has been delivered, the writer does not believe in routine inspection of the cervix. If the hemorrhage is so persistent that a laceration of the cervix is suspected, ring clamps or sponge forceps should be used to pull down the cervix to the vulva, for inspection.

If a tear of 2 cm. in the lateral zone is seen this need not be sutured for when involution is completed, this will be nothing more than a physiological nick at the external os. But if there is a considerable rent into the thinned out lower uterine segment, interrupted sutures of No. 2-20 day cat gut should be placed approximately 1 cm. apart and should be tied for apposition only. This procedure would constitute an *immediate repair* of the cervix.

The establishment of a normal cervix after delivery is a responsibility of everyone practicing obstetrics today. Most of us prefer to examine the cervix 8 days after delivery feeling that we can perform a better repair at this time than we can at the time of delivery—this latter repair may be termed an *intermediate repair.* The torn edges are curetted or scraped with a knife, or trimmed with a pair of scissors and this simple denudation and approximation suffices. In this type of repair, true cervical tissue is not removed, the edges being merely freshened and the granulations removed. Here the author prefers continuous or lock stitch sutures starting at the lateral end of the tear and suturing toward the external os using No. 2-20 day cat gut. This repair may be done under morphine-scopolamine anesthesia, the first hypodermic injection consisting of ¼ gr. morphine and 1/100 gr. scopolamine 1½ hours before operation and a second hypo of 1/100 gr. scopolamine 45 minutes before operation. The cervix itself is not sensitive and it is surprising how little the patient feels this operative procedure if you are careful not to touch the vaginal walls. Some physicians will prefer sacral anesthesia and if the patient is the very nervous and apprehensive type it may be better to use nitrous oxide oxygen anesthesia. The patient may sit up out of bed that night or the next day and this repair does not lengthen her stay in the hospital. The only word of caution I would offer, is that this repair should not be done if the patient has any elevation in temperature at the time, or perhaps should be postponed if the patient has had a significant rise in temperature during the first week of the puerperium.

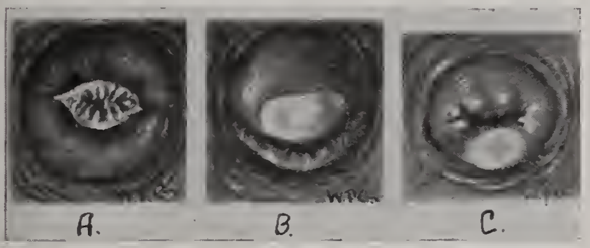

FIG. I.

(a). Lugol Test. Lacerated hypertrophied cervix. Cancer absent. The normal epithelium of the portio and vagina stains a dark, almost black mahogany color. The everted mucous membrane of the endocervix does not take the stain and appears light red or pink.

(b). Lugol Test. Cancer present. The drawing is from one of the author's cases, and shows the normal tissue taking the dark stain. On the anterior lip is seen a patch of cancer, revealed by the Lugol test, where the stain does not take, leaving the area almost white and sharply delineated from the normal tissue. In this case the disease had already reached the multiplication stage as shown by biopsy but was still sufficiently early to warrant a favorable prognosis for radium or operative treatment. Radium treatment was used.

(c). Lugol Test. Chronic cervicitis. Cancer absent. Drawn from one of the author's cases. On the posterior lip was a light patch very slightly tinged with brown. The edges of the area blended with the color of the normal background instead of being sharply defined from it as in cancer. Biopsy showed an intense cervicitis with some loss of epithelium in the upper layers. On the anterior lip are several Nabothian cysts, which often take a deficient stain on the surface.

Taken from Graves—Surg., Gyn. and Obs., February, 1933, Vol. LVI, No. 2A.

We believe that this cervical repair hastens involution of the uterus, gives the woman much more comfort as it is seldom that we see that bothersome and persistent leukorrhoea that so many patients have when the cervix is neglected; and much more important, we believe that these repairs prevent cancer of the cervix. Ignorant as we are of the ultimate pathogenesis of malignancy, we do know that prolonged chronic irritation is its forebear. For this reason no woman should be permitted to retain indefinitely a cervix which is the seat of chronic inflammation, as evidenced by hypersecretion and inflammatory erosion, or multiple cyst formation indicative of irritation of the glandular epithetilial elements. Prevention here is the very essence of cure.

Occasionally, we will examine this cervix 8 days post-partum and say that no repair is necessary, but when the patient returns to the office 4-6 weeks later for her check up examination we will see this annoying leukorrhoea and perhaps some cervical erosion. In this instance the use of the electro-cautery with radial strokes is a great aid in correcting the cervical pathology, curing both the erosion or ectropion and the endocervicitis. These treatments may be given in the office by a platinum loop electro-cautery or by the cherry radio wire knife. Huggins says that "cauterization of the cervix, if properly used, will save many lives and give comfort to a greater percentage of women than any other simple procedure in surgery." He treated 2,895 chronic cases by this method during the last 10 years and seldom failed to cure leukorrhoea. During this time he never found a case of carcinoma develop in the cervix of patients so treated. This is the experience of many other authorities.

It should be stressed again that the puerperium does not end with the lying in period, nor does it end at the conventional time of six to eight weeks after delivery. As Litzenberg has pointed out the puerperium should be thought of as consisting of three periods, the immediate puerperium, the intermediate puerperium and the remote puerperium ending when the mother is restored to a normal condition which may take weeks. months or even years. During this time the patient should be advised to have an annual check up pelvic examination to see if she has an uninfected, perfectly healed cervix; for there can be no greater service on the part of the physician than the recognition of precancerous lesions. A lacerated cervix associated with chronic endocervicitis passes to the malignant stage with no warning. Dr. Kelly states that "the occurrence of cancer on torn cervices is a matter of such common observation that for forty years I have been convinced that this lesion is its one common cause."

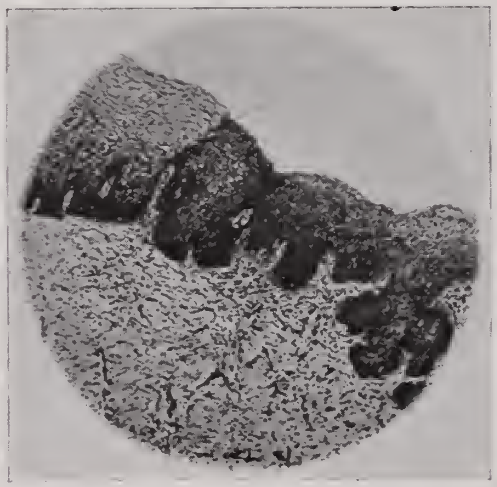

FIG. II.
Abrupt change from normal to cancerous epithelium. In this case there appears on the right a beginning of invasions of the Stroma but there is no elevation of the surface. (Taken from Schiller, Surg., Gyn. and Obs., February, 1933, Vol. LVI, No. 2).

RELATIONSHIP BETWEEN LACERATIONS, EROSIONS AND MALIGNANCY

Watson says that the commonest cause of erosion is laceration of the cervix resulting from childbirth. Bonney states that, in all cases of early cervical cancer examined by him, there was evidence of erosion and cervicitis. Strachan says: "The most important sequel of erosion is undoubtedly carcinoma. The continued irritation of the epthelium of the damaged mucosa would appear to be a predisposing factor in the production of epithelioma of the cervix."

Lillian K. P. Farrar investigated the time after the last pregnancy at which cancer of the cervix developed, and in her series found this to occur:

In less than 5 years in	11.1%
Between 5 - 10 years in	9.5%
Between 10 - 20 years in	41.7%
Between 20 - 30 years in	24.4%

Dr. Farrar considers that cervical lacerations are themselves directly responsible for the onset of cancer and in common with other authors advocates the routine repair of the cervix either by primary or secondary operation.

Bailey has described in detail (some 21 pages of interesting reading and 30 illustrations) the pathology of so-called erosion of the cervix in a series of 850 specimens of the cervix uteri and states that the ultimate sequel to erosion is malignancy. The type of reaction which takes place in the so-called cervical erosion where an acute irritant is in contact with an unprepared epithelium, produces the picture of complete and rapid destruction of the epithelial elements. The densest type of inflammatory reaction, consisting of masses of closely packed leucocytes and lymphocytes, envelopes the remains of the epithelial cells in the affected area. Destruction by maceration and liquefaction is carried out, without any effort to respond on the part of the epithelium. One may observe in such a case that the epithelium adjacent to the affected zone shows only slight reaction. In conclusion he says cervicitis, erosion of the cervix, is definitely related to cancer of the cervix, this relationship is effected through the agency of a factor common to both —an associated inflammatory exudate in contact with epithelium. This is the intermediate causal factor, and is constant.

At this point the Schiller test should be called to your attention as a simple method to locate suspicious precancerous spots on the cervix. This consists of vital staining with Lugol's solution. When the normal cervix is painted with ordinary Lugol's solution the epithelium acquires in about half to one minute a mahogany brown color. However, in the areas in which some pathological process is present no brown staining takes place and the epithelium remains white and unstained. Thus, diseased spots in the epithelium, which escape the naked eye altogether and which can be found only by systematic and painstaking examination of the cervix with the colposcope are made visible in about a minute's time.

The technique is as follows: A cervical speculum is placed in the vagina and 10 to 15 cc. of Lugol's solution is poured or injected into the canal and spread with a tampon over the cervix and left in the vagina for about one minute. The iodine solution is then sucked off with a tampon, the cervix and vagina are cleaned of excess liquid, and gently wiped. It is very necessary that the solution should moisten the entire cervix and that no fold should prevent the entrance of the liquid as that might cause wrong diagnoses.

If the epithelium shows an unstained spot we must be suspicious of cancer and the tissue here must be examined histologically. As a rule the presence of white, unstained epithelial spots may indicate four possibilities:

1. The presence of carcinomatous layers or incipient carcinomata.
2. The presence of hyperkeratosis, a result of prolapse or descensus vaginae.
3. The presence of hyperkeratosis, a consequence of luetic infection.
4. The desquamation of the upper layers of glycogenous epithelium which may have been caused by the touching of the cervix with sharp instruments or by the rough insertion of the speculum. Such traumatic desquamations are easily to be diagnosed by their form, as they resemble narrow sharp and straight line scratches.

The majority of cancers begin at the external os, or outside close to the external os. This painting with iodine is of value in locating the new growth as long as it is in the stage of a carcinomatous layer. As soon as the growth ulcerates, the surface nearly always being necrotic stains brown with iodine and the method is therefore not helpful. On the other hand, ulcerated carcinomata are generally larger and more extensive and are therefore easily visible. In addition they are surrounded eventually by a line of demarcation of carcinomatous epithelium, a white superficial stripe around the ulceration.

I consider this Schiller test one of the outstanding contributions in recent years in our quest for that which will save a large proportion of the 13,000 women who are dying annually in the United States from cancer of the cervix. Happily it is a simple test which can be done in any practitioner's office and if a suspicious spot is found a biopsy should be done and a competent pathologist's opinion obtained. "The key-man in cancer diagnosis and in cancer control is the general practitioner," says Ewing, "unless he is constantly alert and fully competent to recognize the early signs of cancer, detect pre-cancerous lesions, and even to discern the warning against cancer forming habits, all subsequent medical service is handicapped or rendered futile."

We cannot be content with curing 25% of all cases of cancer of the cervix, 50% of the early cases and 7-10% of the advanced cases and this Schiller test if carried out more extensively will certainly bring many more of these early cases to our attention when adequate and suitable therapy is of curative value.

At the present, there is only one known way to combat cancer mortality and that is by the recognition of the process in its earliest stages or better to identify those lesions which are definitely known to be the forerunner of malignancy. Here, the Schiller test will be of inestimable value.

Lacerations of the cervix are inevitable in a large percentage of paturients. Statistics of DeLee, Kelly and Williams show an average of 88% of deliveries result in cervical lacerations. De. Grant Baldwin in a review of 300 consecutive deliveries at the University of Michigan found palpable tears occurring in 69.8% of the cases. Norman H. Williams of Los Angeles that "of 100 women delivered through the birth canal, 86 showed unmistakable evidence of injury to the cervix." This statement was based on a study of 500 consecutive deliveries. The lacerations are more apt to be on the side of the occiput. Posterior positions show more extensive tearing. Manual dilatation of the cervix means manual tearing. Forceps and version with extractions increase the injury. Analgesics such as morphine and scopolamine, or the Gwathmey method, or sodium amytal may be said in general to lessen the amount of tearing for under their influence the resistance of the cervical tissue is diminished and dilatation is accomplished with less force.

To neglect the repair of a lacerated cervix with all of its associated pathology is wrong in the light of our present knowledge. It matters very little what type of cervical repair we resort to and at what time we do it as long as we inspect the cervix early and repair it.

CONCLUSIONS

1. This paper is a plea for a reduction of morbidity resulting from cervical injury.

2. The time for making the cervical repair, whether immediately following the third stage or a few days later, should be determined by the best results. We hold no brief for the "immediate" or "intermediate" repair but in my hands the intermediate repair is more satisfactory.

3. The importance of the Schiller test as an aid in the early diagnosis of cancer of the cervix has been called to your attention. We advise you to use it. The relationship between cervical in-

jury and cancer is probably of fundamental significance.

4. Students and practitioners of obstetrics should be taught that their responsibility does not cease on the 10th day after delivery. Every case should be followed until the cervix is thoroughly healed and involution complete.

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LARGE FIBROMYOMA COMPLICATING THE PUERPERIUM WITH SPONTANEOUS EXPULSION OF THE TUMOR—CASE REPORT*

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The tendency of pedunculated uterine fibroids to become separated from their pedicles has been variously noted. Shelley(1) reports a case of a subserous myoma, 8x8x6 inches, which underwent an acute and probably complete severance from its pedicle. Other cases(2) have been reported wherein such tumors, after separation, have become lodged elsewhere in the abdomen or pelvis, establishing a new blood supply from neighboring structures. In the case of the submucous variety of these tumors Lockyer(3) says: "The tendency of uterine contractions is to express a submucous myoma out of its original bed into the uterine cavity; in this process the growth passes through the sessile stage and gradually becomes pedunculated. In the smaller growths, the pedicles may become reduced to a thin axis of fibrous tissue containing blood vessels, and this may very occasionally become detached and the tumor be expelled spontaneously.

"The large submucous myomata," he goes on to say, "always maintain a broad attachment, and even when their lower pole reaches into the vagina, they are still quite sessile. When the attachment is very wide, the uterus fails to expel the growth." From this we would infer that the spontaneous expulsion of a large sessile fibromyoma must be uncommon.

Brumback(4) reports the spontaneous expulsion of a pear-shaped fibroid about the size of a grapefruit. Maugeri(5) reports a case in which three very large fibroids were expelled from the uterus into the vagina, however without complete spontaneous separation from the uterus. Lockyer(6) reports a case in which the myoma sloughed in the puerperium and came away without operation; the size of this tumor is not stated.

Submucous fibroids are more prone to infection and necrosis than the subserous and intramural growths, because of their liability to extrusion, strangulation, and exposure. According to Lockyer(3), "Sloughing, gangrene, and putrefactions are conditions which are practically confined to the submucous variety of myoma." This fact makes the presence of a submucous tumor during the puerperium exceedingly dangerous. In the case above mentioned by Lockyer(6) he stated that the patient was gravely sapraemic for many weeks. Lockyer(6) reports three other cases with marked puerperal sepsis; these had to undergo operations for the removal of the growths. Tate(7) also makes mention of the tendency to puerperal sepsis of such growths, but goes on to say that "True suppuration of a fibroid tumor is an extremely rare complication." He describes a case with hectic fever lasting for eight months following delivery, culminating with an operation and removal of a very large tumor containing 3½ pints of pus.

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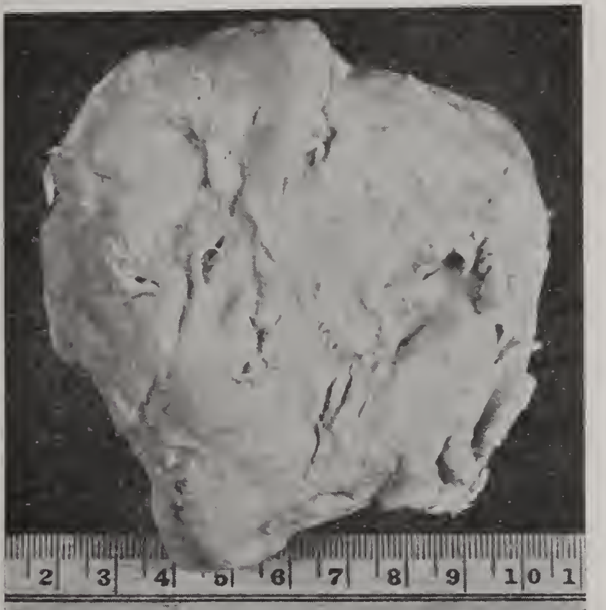
*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

CASE REPORT

Mrs. F. P., housewife, age 25, Para I, though married 4½ years, was first seen on Jan. 4, 1932, for prenatal care. She gave Oct. 21, 1931, as the first day of her last menstruation, setting her period of gestation at the 3rd month. Examination showed the fundus uteri to be about one finger breadth below the umbilicus. Questioned to a possibility of error in her calculation, she persistently maintained her certainty. Her past history was negative; menstruation had begun at 13, was always regular, never excessive, and nearly always painful the first day.

Aside from the height of the fundus which persisted at an unusual level, the pregnancy was uneventful and went to full term according to her calculations.



Large fibromyoma complicating the puerperium with spontaneous expulsion of the tumor. Size of tumor, indicated in centimeters. This photograph was taken after the specimen was fixed in formalin and had shrunk somewhat as a consequence.

Labor occurred on July 18, 1932, was extremely rapid, almost precipitate; she was delivered at home as there was no time to move her to a hospital. The baby, a female, weighed 8¼ lbs. The placenta had to be expressed, and although it was slightly broken up, all cotyledons appeared to be present. There was no perineal laceration.

On July 21, the patient's general condition was excellent and her temperature was normal. The uterus was firm and seemed well contracted, but the fundus was still two fingers above the umbilicus.

On July 23, her temperature was 99.4 F. The fundus was at the umbilicus and the lochia was thin and had a bad odor.

On July 27, her temperature was 100 and pulse 84. She stated that she had a chill the past two afternoons. The fundus was still at the level of the umbilicus, but the lochia was scant and odorless.

On July 29, 10 days postpartum, she felt perfectly well. Her temperature was normal and she had no more chills. The fundus was still at the umbilicus. A diagnosis of uterine fibroid was made and surgery advised in the course of time.

On August 3, the patient was again seen because of a very severe chill. She stated that she had slight chills the preceding evenings. Her temperature was 103 and pulse 108. The fundus was still at the umbilicus, the uterus firm and contracted. The lochia was about normal and had no odor.

On August 5, she had another chill and from then until August 8 she carried a temperature ranging from 99 to 103. On the eighth she had a severe chill, her temperature rising to 106. August 9, her temperature was normal all day, but that evening she developed severe cramping pains, simulating labor pains. The pains lasted all night, and on the morning of the 10th she had another chill. Her temperature was 103, pulse 120. She was removed to the hospital. Her blood count at this time was red blood cells 3,500,000, hemoglobin 54%, white blood cells 16,200, 94% polymorphonuclears.

Following her admission to the hospital the temperature subsided rapidly and on that afternoon she devoloped a considerable purulent vaginal discharge. Nevertheless, the next day, Aug. 11, a curettage was done with dull instruments, under spinal anesthesia. Several blood clots and small fragments of unrecognizable tissue were removed. On the anterior uterine wall the instrument came in contact with a rather hard resisting mass.

Following the operation the patient's temperature came down to between 99 and 100 and remained at that point. Her general condition showed much improvement. She continued discharging purulent material from the vagina. The fundus still remained at the level of the umbilicus.

On August 15, the 4th day after the operation and the 28th postpartum, the patient expelled a large mass of rather necrotic tissue with a very firm resistant center. The odor of decomposition was quite marked. No pain preceded the passage of the mass. Following this, the temperature came down to normal. The uterus underwent involution rapidly and by Aug. 18 was barely palpable above the symphysis. A vaginal examination on Sept. 29 showed the uterus to be of normal size, very firm, with no other tumors demonstrable.

PATHOLOGIC REPORT

Gross: Specimen consists of a tumor mass 10x10x5 cm., rather friable, with a firm center. No pedicle is evident. On one surface of the tumor there is an abscess cavity, about 3 cm. in diameter, exuding pus. On cross section the tissue appears a dark brown color with numerous punctate abscesses throughout with the exception of the center. This central area shows the typical appearance of a fibroid tumor.

Microscopic: The section shows the tissue to consist of interlacing bands of connective tissue and muscle fibers with a definite round cell infiltration.

Diagnosis: Uterine fibromyoma with infection and suppuration.

SUMMARY

A case is here reported of a fairly large nonpedunculated submucous fibroid which complicated pregnancy, becoming infected and suppurating in the puerperium, causing a severe sepsis, and finally sloughing and being expelled spontaneously.

I wish to express my gratitude to Dr. J. A.

Weinberg for the assistance he gave me in the handling of this case and in the preparation of this paper.

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DISCUSSION

J. A. WEINBERG, M. D., (Omaha): I wish to comment on this case, because I had occasion to see the patient with Dr. Margolin just before she went to the hospital. Apparently this tumor was very small before the beginning of pregnancy, and enlarged with the pregnancy. This enlargement was probably the result of the increased blood supply and the tendency of this tissue to undergo hypertrophy during pregnancy.

While the rarity of the case is interesting, the most important feature is the difficulty in deciding on the proper treatment when confronted with the problem of an infected myoma in the puerperium. There could be no more dangerous period for such an occurrence. No doubt degeneration took place because of the trauma incident to the pressure of the fetus, and the involution of the uterus following delivery.

One does not like to endanger the life of the individual by operation during the puerperium and one does not like to leave the condition to its possible dangers. Fortunately, Nature solved the problem in this case. If spontaneous expulsion had not occurred, what would one do in such a case? I think one would have to choose the lesser of the two evils, and remove the infected tumor by operative attack. Dr. Margolin must be happy that he did not have the problem to answer.

DR. MARGOLIN, (closing): In regard to Dr. Weinberg's statement about the possibility of the growth of a tumor during pregnancy, there is a question there. Dr. Lockyer questions whether they grow during pregnancy. He says the apparent enlargement is due to an increase in the vascularity and edema, rather than to growth of the tumor. Other authorities state they do grow. I do not know whether that woman had a tumor of that size. She may have had. She is not the kind to complain, and never came for examination.

Suppuration is rare in these tumors. I have found only three cases of spontaneous expulsion in the entire literature.

POSTOPERATIVE MORBIDITY AND MORTALITY*

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Kimball, Nebraska.

It is obvious from the scope of the subject that it will not be possible to deal in an intimate way with any special postoperative condition but to give a general resume of the prevention of postoperative morbidities and mortalities and to stress some of the more general methods of treatment in these conditions.

The past decade has seen a wide spread interest and much activity in the further study of the causes of postoperative morbidities. There has been no time in the history of modern surgery that so much study has been applied in searching out the various causes of surgical mortalities. The surgeon has been constantly finding new things, new discoveries and principles, methods and suggestions to help fortify and carry his surgical subject more successfully through surgical operations.

We should all remember that the most important individual at an operation is the patient himself, and that his general well-being and future health should be held paramount when surgical procedures are contemplated. If the patient is so important at an operation we should also consider that his pre- and postoperative care is also most important and everything done to insure the patient's ultimate return to society as a useful member.

When Lister revolutionized surgery by the application of proper surgical sepsis the hand of the surgeon was freed from the death grip of one of the most common postoperative conditions—sepsis. It was no longer necessary to wait for laudable pus and the sloughing that so often follows contaminated surgery. Today the infected operative wound may well bring reproach to the surgeon and his assistance in the case, and always bring a searching for the cause and slip that might have been made in the operative care of the patient.

Modern surgery has developed into an art and into a degree of efficiency with precision and skill and technical excellence that probably in the future will not be much improved upon. It seems that the acme of surgical perfection and craftsmanship has been reached.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

Lord Moniham's oft quoted aphorism is appropriate for the present situation in that "Modern aseptic surgery has made the operation safe for the patient, and it should now be the aim of surgery to make the patient safe for the operation." The patient should also be safe long after the operation, and it is only by a thorough understanding of the patient that these conditions can be made safe.

I believe that many operations performed with the most careful technic and skill are nullified in not having the proper understanding of the patient's condition and proper fitness for the ordeal. This is often true in the emergencies that arise which require prompt action to adjust the pathology.

The proper supervision of our surgical cases after operations is often neglected; too often the surgeon shifts the responsibility to the shoulders of an interne or less experienced individual. Surgical success would be more if closer individual attention were given to postoperative recoveries. I can remember clearly during my hospital internship in Chicago that many patients failed to pass a certain crisis due to inability to reach the attending man for proper instructions in the treating of emergencies that arise postoperatively. The work of the most brilliant surgeon can be lost by improper postoperative care.

Every surgeon and physician here today can recall that the fatal tide of his patient has been turned and a life saved by the early and proper transfusion of the exsanguinated patient, and the early use of a warm saline and glucose solution dripping into the veins of the shocked, cold, pulseless man, dying of a crushing injury or abdominal insult.

We daily see the good results from intravenous use of glucose and the subcutaneous results of saline in the regurgitating and dehydrated patient, the results of intestinal obstruction or acute ileus; the splendid results from gastric lavage or the proper use of the duodenal tube in ileus and peritonitis; you have witnessed the saving of life by a prompt jejunostomy in ileus and peritoneal irritations; you have witnessed the splendid results from the use of the oxygen tent in the early treatment of the postoperative pneumonias; the use of insulin and glucose in the treatment of diabetic comas and acidosis; the use of hypertonic salt solution aided by active catharsis in shrinking an edematous brain.

Then to arrive at the goal of reducing materially all our postoperative morbidities it is necessary that first we take the patient and have a thorough, complete history of the patient, and I mean by that a complete history, going into the past history of illness he or she may have had. A complete statement of the patient's complaint covering the small details that so often bring out important findings in the examination.

A first class history is most important and a necessary prelude to a proper diagnosis. If it is properly taken and analysed it will assist very much in preventing some of the postoperative morbidities.

A proper physical examination and evaluation of all findings and symptoms will help to eliminate some of the surprises that occur in surgery.

After the history and physical examination we arrive at the diagnosis and this becomes the key that unlocks the door, for it is only by correlating the above that a proper understanding can be arrived at concerning the patient. In surgical practice as well as medical there can be no sound and rational therapy without rational diagnosis. The laboratory is the sheet anchor of the surgeon in having accurate blood counts, proper serological and tissue examinations, and having at hand urinalyses that help to uncover many obscure complications. Stomach analysis, complete blood counts, x-ray findings, urinalysis sedimentation test, and other laboratory procedures will be found of value in arriving at a proper diagnosis. The patient should be seen as a whole, taking into consideration the history and physical appearance of the patient. Every physician should use his sense of feeling, sight, hearing, and intuition in the ferreting out of obscure conditions.

I will take up briefly some of the things that are important in the recovery of the patient:

THE ANESTHETIC

In a surgical case of the so-called major type that is a poor risk the anesthetic and anesthetist should be recognized as an important factor in the patient's recovery and well being. The nature, time, type of operation and condition of the patient should have an important bearing on the type of anesthetic to be used. The whims of the operator should not be considered as ground for the choice. The anesthetic should be so administrated that the surgeon need have no worry or concern, nor need to supervise the activities of the anesthetist.

After the operation the patient should be carefully protected from cold and returned to bed in good condition. All mucus should be removed from mouth and throat, sometimes a stomach lavage is indicated. I believe it is important to maintain the proper heat, keeping the patient in warm blankets and well protected until well awake. There is also a danger of heat stroke in keeping the patient over heated. The anesthetist should remain with the patient until the patient is fully awake. The position of the patient in bed is important for his comfort. Fowler's position helps prevent pulmonary complications taking the viscera away from the diaphragm.

The mental attitude of the patient is important as the apprehensive patient often withstands surgical procedures rather poorly. Crile's Anociassociation along with psychotherepy will often stand the surgeon well in hand and help to allay the patient's fears.

Since many of the postoperative conditions and treatments are prophylactic it behooves the surgeon to closely study the patient before the operation, then there will be an early recognition of impending complications and proper treatment can be instituted to meet the emergencies. In some of the acute abdomens with ruptured viscus, as appendix, ruptured ulcer. ruptured ectopic, there will be no time to get the proper evaluation of the patient, and here surgery is often handicapped by certain complications before operations that raise the mortality of the operation. The surgeon should be on call, so to speak, and never delay seeing a patient and having proper surgical procedures instituted in these accidents. Too often when the patient comes in late at night with perhaps a ruptured appendix the surgeon delays seeing the patient, looking for a few hours sleep—and thus the mortality curve swings upward.

After a major surgical procedure it is highly important to keep the proper water balance in the patient and the supply of fluids to a dehydrated patient may be done through the use of salines per rectum, under the skin or per vein. This along with glucose solutions carry many of the operative cases along without the discomfort so often present when water is denied. We must keep the proper water balance which is the ratio between intake of water by ingestion of food and water, and the excretion of same by the kidneys, lungs, skin, and bowels. The proper supply of water will prevent many cases developing acidosis and alkalosis in post operative conditions.

It is obvious that the length of time permitted for this paper will not permit the discussion of many of the postoperative complications and they will be mentioned with but little comment and left for you to consider. Abdominal distention, dilation of the stomach, peritonitis all need active treatment. Often the proper supply of saline and glucose to the patient, the patient's position in bed, the use of enemas, packs to the abdomen, stomach, lavage, and the proper use of morphine will guide the surgeon and patient safely through some of these impending crisis.

Pulmonary complications: About one in fifty patients will develop some lung complication such as lung abscess. pneumonia, pleurisy, gangrene, bronchitis, infarcts, and embolism, and there are many opinions as to the causes and proper treatment, and what we really know is based upon the bedside study of the individual patient.

Urinary disturbances are often found following operative procedures, and conditions of retentions, suppressions require prompt treatment. The treatment of pyelitis and nephritis is prophylactic and early study of the patient will often keep the surgeon on guard as to the procedure to take.

Other complications are thrombophlebitis, parotitis, hiccoughs, psychoses, and postoperative hernia can only be mentioned. They are important and indeed a volume could be written upon any one of the subjects, as every surgeon has seen these complications repeated many times.

My plea then for the reduction of postoperative morbidity and mortality is first a real study of the patient pre-operatively, a proper history and a diagnosis made from a careful physical examination and laboratory findings.

There should be a proper time for hospitalization and study, a thorough study of the patient's circulatory, and system of elimination. an early recognition of impending complications with the institution of prompt and efficient treatment. The surgeon with all these findings at his fingertips and who has the ability to perform the surgery in hand will help to eliminate many of the morbidities that occur. We should all remember that the patient is the most important individual at an operation, and no stone should be left unturned in seeing that the patient is returned to society recovered from the ailment for which he sought relief.

DISCUSSION

MAX EMMERT, M. D. (Omaha): I do not think a paper like this should pass without discussion. It is not only good, but timely. There are one or two things I think might be stressed a little. Many postoperative complications are due to lack of preoperative preparation. One essential is to see the patient has plenty of fluid in the tissues. The other is to guard against acidosis. Especially in gallbladder cases, we should alkalize our patients before operation. If the patient is prepared properly, the postoperative complications will be fewer. We must remember the patient has lost considerable fluid during operation, especially if ether is used. The other is the danger of acquired imbalance.

If these were replaced immediately, the crisis would pass without trouble. If there is sign of heart failure, it should be fortified by digitalis. It is easier to prevent cardiac dilatation than to cure it after it starts.

A PRACTICAL STUDY OF VASECTOMY

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I wish to call attention to the usefulness of a relatively simple surgical procedure, to discuss its physiologic effect, and to describe a convenient method for its accomplishment.

Vasectomy may be defined as the process of interrupting the continuity of the vas deferens at any point between the epididymis and the seminal vesicles. All indications for such interruption can be classified under one of two headings; first, the prevention of the passage of infection from the seminal vesicles to the epididymes, and second, the prevention of the passage of spermatozoa from the epididymes to the seminal vesicles. In the first group are to be listed a small number of young and middle-aged men who, in spite of careful attention to chronic prostatic and seminal vesicular infection, have repeated disabling attacks of epididymitis. Of far greater number are the older men with obstructive prostatic disease in whom some sort of surgery, either radical or transurethral, will be necessary to give them relief. Epididymitis during the preoperative period of preparation, as well as in the period of convalescence was, until recently, even in urologic practice, a fairly frequent occurrence among these elderly men. The complication was often recurrent, and was always painful, debilitating, discouraging, and time consuming. Occasionally abscess formation required incision and drainage, and rarely the supurative process went on to orchitis and orchidectomy. By the simple method of vasectomy these particular complications in prostatic surgery have been entirely removed.

Vasectomy for preventing the passage of spermatozoa is best regarded solely as an operation of choice to be considered by those husbands who would prefer to undergo a safe, simple, and economical procedure on themselves rather than submit their wives to a major operation with its attendant risk, pain, and expense when they are faced with the necessity of absolutely preventing further pregnancies.

The surgeon will have no difficulty in suiting his action to his advice in the management of the first group of patients, for in all these individuals infection, with its attendant pain and disability, is either already present or is to be anticipated, and the patient places himself in his doctor's hands without any mental reservations or apprehensions concerning the wisdom of whatever that man proposes to do. In the second group however, the situation is decidedly different. If the physician has decreed, because of ill health, that further pregnancies must be avoided with certainty, either the wife or the husband must submit to some form of surgery, for as yet the ideal and perfectly dependable contraceptive has not been discovered. The sick wife can understand the necessity for a salpingectomy, but it may be difficult for the robust husband to understand how he himself can more readily and safely solve the family problem than can his wife. He may be unaware of the possibility that a simple operation serving the same purpose as the one proposed for his wife may be done so easily on himself, or, knowing of the operation, he may be uneasy concerning its possible after effects. In some cases the physician himself may either fail to think of the possibility of vasectomy, or, knowing the frailty of masculine nature, may hesitate to broach the subject because of the difficulty of convincing the husband that besides being a relatively simple operation, it is also quite harmless in its physiologic effect.

PHYSIOLOGY AND HISTOLOGY

As a gland, the testicle has two separate and distinct functions: The production of spermatozoa, and the elaboration of an internal secretion which influences the secondary sex characteristics of the individual. The histologic elements concerned in the two-fold function are likewise separate and are easily recognized as the epithelium of the convoluted tubules and the interstitial cells, or cells of Sertoli. The convoluted tubules are the generative epithelial portion of an excretory system of ducts which finally converge through the rete testis and epididymis to a simple channel represented by the vas deferens. Ligation of this duct on each side prevents the further liberation of spermatozoa.

Much work has been done on laboratory animals to determine what histologic and physiologic changes follow vas ligation. In the interpretation of the results it is necessary to recognize that the healthy functioning of the testicle in animals of the type of man depends on its situation in a scrotum where it is normally maintained by a closed inguinal canal. The work of Moore(8) has shown conclusively that a testicle placed within the abdominal cavity, without disturbing its blood and nerve supply, suffers degeneration of the epithelial tissue concerned with spermatogenesis, and that even the transposition of a testis to a point just under the skin of the lower abdomen so alters the spermatogenic function that the process, though continuing, never results in the production of mature spermatozoa. A number of investigators, desirous of knowing the effect of vas ligation, have done their work on rodents (rats and guinea pigs) and have reported degeneration of the seminiferous tubules without any coincident change in the interstitial cells, and without any change in the sexual behavior of the animals. Further studies, using dogs, sheep, and swine where the testicle could remain undisturbed in its scrotal position, have given contradictory results in that no change whatever in either type of testicular epithelium occurred after vas ligation. Reviewing the work of Moore, and keeping in mind the fact that an artificial cryptorchism easily occurs following the ligation of the vas in rodents, it is seen that the conclusions regarding degeneration of seminiferous tubules after vas ligation as reported by some investigators must be ignored. Steinach of Vienna, whose pioneer work in 1910 and 1913 first established beyond question the function of the interstitial cells as controlling sex impulse and secondary sex characteristics, also used rodents, and vas ligation seemed to produce a relative degeneration of spermatogenic elements in the testicle and an increase in the interstitial elements. He concluded that vaso-ligation, if it increased the tissue governing sexual impulse, would be of value as a rejuvination measure. Subsequent clinical observation disproved his assumption that sexual vigor would be increased by vas ligation, and further work on laboratory animals proved that the increase in interstitial tissue was more apparent than real, for as the seminiferous tubular epithelium with its degeneration (most likely due to artificial cryptorchism) became less prominent in the microscopic fields, the interstitial elements were more conspicuous because less crowded than they had been normally.

More recent study on animals whose anatomical relationships are similar to those of man has served to establish the fact that neither the interstitial tissue nor the epithelium of the seminiferous tubules is damaged in the least by ligation of the vas. Work by Oslund(9) is outstanding. To quote from his report on a generous series of dogs operated upon and studied histologically, "Vasectomy does not cause degeneration of the germinal epithelium or hypertrophy of interstitial tissue." Dog testicles were examined on an average of two months after operation. Some had only one vas ligated so that the two testicles could be compared later with the unligated gland acting as a control. Some had bilateral ligature. In all dogs, when castrated, the two testes were indistinguishable macro- and microscopically. Seminiferous tubules were full of both mature and maturing cells, and in no case was any change found in the interstitial cells. To quote Oslund again, "though spermatogenic material has been rapidly and abundantly produced in the testes of dogs, absorption has taken place with sufficient rapidity to prevent an excessive pressure within the tubules."

Human material for similar investigation has not been lacking. In a postmortem specimen described by Hunter(9) there was no anatomical connection between vas and testicle, yet the testicle was found to be normally developed and to contain spermatozoa. A number of cases have been cited by Curling(3) in which the vas deferens was either closed or absent, and the testicle in every case was sound. He concluded that "the absence or imperfection of the excretory duct does not prevent the development of the testicle at the proper period, and has no direct influence in causing it to waste." Gosselin(5), in a dissection of a man about twenty-five years of age, found the vas wanting on the right side between the epididymis and bladder. The epididymis was distended with a yellow fluid containing enormous numbers of dead spermatozoa.

As regards sex impulse following vasectomy, physiologists report little change in the behavior toward the female on the part of the vasectomized male. Careful questioning of men who have submitted to vasectomy furnishes a basis for the opinion that neither desire nor ardor are dampened one whit in degree, manner, or frequency. Added to this entirely selfish consideration is the report that from the standpoint of the wife the marital relation has been changed from an act of dutiful submission, often filled with worry and dread, to that which it was intended to be, an occasion of pleasure of the highest type, tending to cement the bonds of marital happiness more firmly than either of them had deemed possible. This is not sentimental raving, but facts set down as simply and as truthfully as possible by one to whom it has been reported unsolicited by delighted husbands.

METHOD OF OPERATION

The technique of vasectomy may be rather complicated or it may be extremely simple according to the methods used and the experience of the operator. In the narrow specialty of Urology unusual opportunity for the development of ease and accuracy of technique in ligating the vas is furnished by the relatively numerous cases of prostatic obstruction. Whether prostatectomy or transurethral surgery is planned, vasectomy is now done routinely as a prophylactic measure against the development of epididymitis as previously mentioned. With sufficient experience, and the dexterity which comes only as a result of experience, vasectomy, as it is about to be described, becomes an office procedure.

The vas, soon after it leaves the region of the globus minor of the epididymis, ascends along the posterior or dorsal aspect of the spermatic cord toward the spine of the pubis. It is the hindmost of those structures which make up the funiculus spermaticus to which it is attached by loose areolar tissue and from which it can be readily separated by careful palpation. It is identified as a firm straight cord-like structure about one millimeter in diameter. Ease of palpation depends on relaxation of cremaster. If this muscle is strongly contracted, isolation of the vas by palpation through the thickened integument becomes exceedingly difficult. The problem is to expose this structure through a small incision somewhere near the middle of the scrotum on each side and to remove about a centimeter of its length between two ligatures.

It is important that neighboring structures be disturbed as little as possible. If the scrotum is relaxed and palpation is easy, all neighboring structures are patiently manipulated to one side until the vas is held between thumb and first finger with the minimum amount of skin cremaster and fascia drawn tightly over it. Once isolated and securely grasped, the hold should never be relaxed until the vas is delivered through the incision. When properly isolated and held, an injection of one percent novocaine is made directly over the vas, using a small syringe and a very fine hypodermic needle. An incision slightly over a centimeter in length is then made through skin, cremaster and fascia onto vas. Several fine fascial envelopes surround the vas, but all of these can be divided if a very sharp knife is used, and the vas itself can be made to bulge through the incision from its crowded position between the fingers of the operator. At this point a little more novocaine may be injected into the fibrous sheath of the vas at either end of the incision. The vas is then elevated above the edges of the incision by means of passing a bluntpointed dissecting probe under it, and is grasped by two mosquito forceps placed a little over a centimeter apart. Ligatures of fine chromic catgut are placed behind each hemostat and the intervening section of vas is removed. Generally there will be no bleeders to ligate and no contiguous structures will be disturbed. The two ligated ends of vas are then released and allowed to retract into the wound. A single skin suture of catgut may be used, but the incision is generally so small that no skin closure is necessary. The operation is repeated on the opposite side, a piece of sterile gauze is applied under a suspensary, and the patient is allowed to return to his home. Some patients do not remain indoors at all. Others report sufficient feeling of weight in the testicles to cause them to remain home for a day.

In those cases in which the scrotum is strongly contracted. ligation and section of the vas will be very difficult by the above method if not actually impossible. For such cases the technique may be slightly modified as follows. The scrotum must be gently stretched until the vas can be palpated and definitely isolated. The scrotal wall will remain too thick however to allow the vas to be firmly held between finger and thumb while incision is made as previously described. A better procedure is then to use the first and second fingers to stretch an area of scrotal skin across the ball of the thumb in such a manner that the isolated vas lies parallel to the thumb just under the taught skin and free to move back and forth only between the two fingers. Skin is infiltrated and the dissection and ligation is carried out as with the other method of fixation. In either case the operator's left hand is engaged continually in maintaining the vas in a position most favorable for approach without disturbing any neighboring structures. The operation can be done without an assistant if necessary.

After operation the patient is instructed to continue his family relationships when and if he chooses, observing however, the usual precautions against impregnation for four weeks; the reason being that there is present in the seminal vesicles a supply of spermatozoa which must be expended. After this interval microscopic examination of seminal fluid should reveal no spermatozoa present if the continuity of the vas has been successfully interrupted on each side.

It is not intended that this paper shall give the impression that vasectomy can be offered as a contraceptive measure except in those cases where a competent physician has advised the operation as a substitute for salpingectomy.

SUMMARY

1. The practical uses of a simple but valuable procedure are reviewed.

2. Evidence is presented to show that vasoligation will not be followed by any ill effect on health or on sexual function.

3. A simple and inexpensive method of vasectomy accompanied by a minimum of morbidity is described.

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REPORT OF DELEGATE TO THE 1933 ANNUAL CONGRESS OF MEDICAL EDUCATION AND LICENSURE*

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The Annual Congress of Medical Education and Licensure, held under the auspices of The Council on Medical Education and Hospitals, of the American Medical Association, occurred in Chicago, February 13th and 14th.

This congress brings together many men and women from over the United States and Canada who are giving much or all of their time to a phase of medical work not concerned primarily with the treatment of disease. There are medical college deans and teachers, hospital directors and superintendents, training school executives and teachers, public health directors and medical researchers, as well as those engaged in active practice of medicine, nursing, public health, pharmacy, etc. Especially active also in these council meetings is the Federation of State Medical Boards for Licensure.

The attendance this year, though slightly less than the immediately preceding years, was very good.

The program was opened this year by Ray Lyman Wilbur, chairman of the council, who gave a brief summary of the council's recent activities.

The various problems outlined by Dr. Wilbur were taken up in detail in the program of the following two days. Some of the important subjects which came up for consideration were:

I. Medical Education Abroad.

II. Internship Problems.

III. Recognition of specialists for Licensure and their continued registration.

IV. Training and licensing technicians.

V. The need of Professionalization of Public Health.

VI. Medical Economics.

I. Medical Education Abroad. This subject has several phases. We are just now about to have sent back to the United States, some two thousand of our citizens who have been declined medical education in this country because of inferior qualifications, and who have received medical education in Europe. These recent graduates have had very inadequate hospital and internship training; and just what reception our licensure boards should give them, is a problem. Foreign trained students appearing before our state boards show 42.4% failures, while American trained students show but 3.04% failures.

Medical education abroad was discussed from a different viewpoint by Alan Gregg, director of Medical Science in the Rockefeller Foundation, who has just made an extensive survey of medical education in Europe. Medical education in Europe is very different from that in the United States. The student there is rather "exposed" to education but not compelled to meet requirements, as in this country. The student is advised to (1) observe; (2) to formulate an opinion; and (3) to search and select from the literature such facts as will help him interpret his observations and prove an opinion. Dr. Gregg seemed to think that more and more of this type of education should be injected into our method here in America. He spoke of how crowded the fields are there, and that every student and teacher as well must expect to run with the crowd to avoid stepping on the fellow ahead of him or being stepped on by the fellow following. There is far more waiting, in that country, for the professor ahead of you to move out of the picture by death or by age before you can be promoted to the coveted position. Also, influence and family wealth and prestige are inherited rather than acquired, as in this country, by individual activity. This process, however, has its advantages, as seen in Europe; because there is less often an assumed importance or ability which is not merited or deserved.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

Dr. Lyon, of Minnesota University, discussed Gregg's paper. He admired the idea of teaching individual activity so far as observing, of extracting information from the literature, and drawing one's own conclusions were concerned. In fact, he thought the modern student had to be almost a self-carbureting, self-lubricating, automatically igniting unit, if he lived up to the requirements of the present day curricula, in America. He questioned the statement that the European methods as a whole were superior.

In comparing the higher up professors and specialists in Europe with those of the United States, he though that we were lacking in our recognition, our selecting, and licensing, and advertising of qualified specialists. He did not have a certain way of bringing about this desired end, but he believed this was one of the problems before the council for immediate consideration.

Dr. Lyon, in his discussion, injected the question of over-crowding in the medical profession. He did not know whether it was worse or better than that existing in Europe, but he was sure that its very definite control in this country was necessary. He argued that over-production was bad because it meant inadequate income and this invited improper practices, and hence poorer service to the people.

In the U. S. A. there are 1281 M. D.'s per 1 million population, or 1 to 780.

In Spain there are 1000 M. D.'s per 1 million population, or 1 to 1000.

In Canada there are 960 M. D.'s per 1 million population, or 1 to 1042.

In Great Britain there are 937 M. D.'s per 1 million population, or 1 to 1067.

In Greece there are 857 M. D.'s per 1 million population, or 1 to 1066.

In Germany there are 765 M. D.'s per 1 million population, or 1 to 1307.

In France there are 625 M. D.'s per 1 million population, or 1 to 1600.

II. Internships. Dr. Willard C. Rappleye, of Columbia, discussed the Internship Problem. He pointed out that seventeen state boards now require internship service before licensing practitioners in their states. These seventeen states require internship service also for graduation. He pointed out that the internship service depended very much on the hospital staff, and unless the service was properly organized and some house officer made definitely responsible for the internship activity, that it was certain to fall short of the desired teaching value. He pointed out that only ten per cent of the patients are hospitalized, and, therefore, the interns should in some way have access to out-patients, and thus become accustomed to practice outside of the hospital. He stressed the importance of honest, scientific, moral contact with the patients in the presence of internes. Examples of this kind have a very important and lasting influence on the young doctor, and it behooves every staff man, therefore, to qualify in this way with his contacts with internes.

III. Recognition of Specialists. The first paper on the program was given by Dr. Sanford Gifford, of Chicago. He discussed the function of special Boards of Examiners. The various specialties have come to have their own organizations, to which a man is eligible only after examination. Certainly this recognition becomes important and probably will be highly useful in aiding the Council on Medical Education to recognize and perhaps license specialists.

Dr. Walter Bierring, secretary-treasurer of the Federation of State Medical Boards, pointed out how forty-one states had accepted the National Board of Examiners as satisfactory in licensing practitioners in their forty-one respective states. He urged uniformity in the preparation of specialists in the various sources for medical education, so that national requirements for registration, for supervision of practice, and for continued qualifications could be set up.

Dr. Irving Cutter, Dean of Northwestern, read a paper on The Function of the Medical Schools in the Recognition of Specialists. He pointed out that the medical colleges had recognized their responsibility in the preparation of specialists. The graduate school of the University of Minnesota, under the Mayo Foundation, had accomplished most along this line. Pennsylvania University, and Johns Hopkins, and a few others, had added to this accomplishment. Fellowships in various places, lasting three to five years, are now available but in reality they are relatively few in number. He said that twenty per cent of the graduates taking internships since 1930 have indicated their desire to take work in excess of two years' service. He thinks that residencies of one to three years now offer the best opportunity for graduate education. Some such system as the method used in the Mayo Foundation is believed to be the best. His summary included the following points:

1. To continue to direct undergraduate medical education.
2. To increase fellowship opportunities, and build them up around teaching hospitals, with ample clinic and out-patient facilities.
3. To maintain a coordinated relationship between organized medical societies and practitioners.

Dr. Lyman Wilbur read the final paper, on The Relation of the Council of Medical Education and Hospitals to the Special Practice of Medicine. He pointed out how the special practice in medicine had been a gradual growth. He believed the A. M. A. Council to be in a better position to sponsor a directory of bona fide qualified specialists than to have it sponsored by any society of specialists. He seemed to think that they came nearer having the machinery to judge who should be rated as a specialist than any other going concern. He offered the following method as suitable for the organization of specialists:

1. To require a certain minimum standard of preparation.
2. To maintain a list of schools organized to prepare these specialists.
3. To maintain a list of hospitals suitable for their training.
4. To decide who already in the field was eligible or qualified to pose as a specialist.

Because the A. M. A. has inspectors in the field and has been recognized as fair and competent in its activities of the past, he believed that they would best succeed. He thought that they could proceed without legislation and that its opinions would be recognized as they had been in the past, concerning the qualifications of medical schools, hospitals, and even the special practitioners themselves.

In the discussion of this paper, Dr. Louis B. Wilson, of Rochester, Minnesota, gave it as his opinion that the A. M. A. was in the best position to help recognize qualified specialists. He did not believe the present A. M. A. directory was reliable. He thought a directory should give detailed information, and that the A. M. A. should sponsor its authenticity. He doubted if the American College of Surgeons was as well qualified as the A. M. A. to get this information. He thought that special examining boards of the various specialties would help a very great deal. He thought the colleges would help more and more in the future. He though the board should be called a "Qualifying Board" rather than an examining board, and believed that its scope should be national rather than local. He did not believe the Federal Board of Licensure could render this service, because they are not specialists; but by the affiliation of these various bodies, he thought the ground work for a qualifying board could be provided; then, later, if laws had to be formulated in the various states for the governing of the licensing of these specialists, certainly an A. M. A. Blue Book previously established would do much toward guiding the legal activities aright.

IV. Training and Licensing of Technicians. The great importance of clinical pathology is recognized in all diagnostic work. Therefore an opinion handed down by a technician not properly trained is not only valueless but it is dangerous. Since 1928 a standardization and now even licensing of technicians has been undertaken. The Board of Registry in 1928 undertook to maintain minimum standards, to require applicants for technicians to register, to establish schools for training, and in general to maintain high standards. The American Society for Clinical Pathologists was organized, requiring a high school education, credit in basic sciences, and one year in apprenticeship in a recognized laboratory or else the same time in an accredited school. Now, after April 1, 1933, an examination will be required for members in the society and the applicants will be required to sign a promise to work only under an M. D. and never to make diagnoses.

At the present time there are thirteen hundred technicians registered in the United States and acknowledged by the American Medical Association and the American College of Surgeons.

Medical colleges in Kansas, Minnesota, and the Northwestern Medical, now offer a four-year course leading up to a Bachelor of Science. Other good medical colleges offer a two-year course leading to a certificate. It was stressed by several entering into this discussion that the personality of the technician and the general personnel of the laboratory was far more important than the equipment.

V. The Need of Professionalization of Public Health. Dr. John A. Ferrell, of The Rockefeller Foundation, presented an interesting paper on the need of professionalization in public health. The question was asked, "Is public health a specialty, and if so has it progressed far enough to be standardized and licensed; if not, should agencies now be established in recognized teaching centers to qualify the future participants on a professional basis?" There is very much knowledge assembled in public health work. Much has come from the medical world but much also from other fields, such as engineering, epidemiology, nursing, etc. There are now various schools and universities giving a certificate or degree in lieu of the course they offer in public health. In 1931 there were 131 such degrees; in 1932, 140. The United States Public Health Department has established minimum required standards, and twenty-seven states in the nation now require an M. D. degree and experience in public health before granting the applicant a position in the public health department.

Whether the time has now arrived for professionalization of public health work or not, the truth is that much will be required to improve the status. Over the United States there are many, many non-medical health officers, and it will take a long time to standardize upward through these ranks. Still, the same A. M. A. evolutionary procedure which has moulded other health branches during the last two decades is now in operation on public health, and results will follow.

The author thought that the National Board of Examiners might assist in passing on the requirements of the schools teaching public health, and through cooperation with the A. M. A. and the associated American medical colleges and universities, so hasten the day when public health work would qualify as a profession. He stressed the fact that public health focuses on the health of the community as a whole, whereas medicine focuses only on the patient.

VI. Medical Economics. Several phases of economy in medicine were presented. The first pertained to the separation of research from teaching. Professor Coughlin, of St. Louis University, led the discussion. He thought these two subjects should be separated in the university work. First, he though that the cost might be better adjusted if they were entirely separate. At present he seemed to think the costs of medical education were being unduly taxed by the costs rightly chargeable to the researcher. He thought the researcher might be able to teach some, but certainly he did not think he should be an administrative officer. He made some other interesting comparisons. He said that the researcher was somewhat like the football team in the college. If it was much advertised, it might run to a balance and even support other departments in the athletic side of the institution. The same way with the researcher. If his publications were largely dispensed, he might run to a balance. In fact, he said that some researchers came boasting that they had done twenty pieces of work, and nearly all of them had been published. In any event, the researcher should be allowed time for concentration, and many times he was not trained in pedagogy and teaching and therefore he was a poor teacher.

Dr. Davis, of the University of Illinois, did not agree with Dr. Coughlin. He thought that some of the very best researchers had been teachers and had been students, and he urged that the two be kept together. In the University of Illinois the upper third of the higher classes were allowed to elect research work. Some of these are bound to be excellent men in that line, and go on with their masters and Ph. D. degrees. He thought it was difficult to evaluate the accomplishment of a successful piece of research work, and that while costs were important they should not come into great consideration if the work was properly directed. He cited some of the work done in the Toronto University, on diabetes; in Chicago, on anemia and scarlet fever, and gastric ulcer. He though this showed the accomplishment of research work done by teachers and students. He urged that all researchers teach some. He thought that it helped them to organize their thoughts and their materials.

Another phase in medical economics, and agreed upon by each of these two speakers, was that the cost of preparing a general practitioner is too great and that certain work should be cut out and more study done on what training was necessary for a general practitioner.

Naturally the economic phase of the cost of the care of the sick came in for discussion—yes, even debate. Dr. L. F. Barker, of Baltimore, presented the affirmative side, or the majority report of the famous survey on medical costs; and he defended it fairly well. He recited the things on which all members of the committee agreed; namely, that there should be available adequate medical services for all classes of people. The majority report of the committee advised:

1. That medical service be built up around groups, preferably associated with hospitals.
2. That service be available to the entire population, according to the needs.
3. That the cost of this care be adjusted by tax or insurance, either voluntary or compulsory.
4. That continued study, evaluation and coordination of medical practice be continued by the state, or otherwise.
5. That the practice be improved by means of perfecting the under-graduate and through the post-graduate courses and all allied medical branches and by the further regulation of specialties.

Not all of these recommendations were approved by the minority, and the minority especially opposed the further management of the practice by the government except for the indigent, and urged that it was not conducive to the best personal contact between the patient and the doctor to have practice built up in groups around hospitals. The Minority Report further contends that the cost cannot be properly handled by insurance, either voluntary or compulsory. It urged the restoration of the general practitioner to the central place in medical practice.

In the discussion, some native born Russian Hebrew, who had recently made a study of the practice of medicine under socialism in Russia, emphasized vigorously and vociferously, that the medical care was very inadequate and improper and led to vicious practices. It happened that Dr. Barker had spent two months there himself, and he made the statement that the women and children were better cared for in Russia than they are in America. This surprised me very much. He repeatedly stated that he gathered a much different opinion than the discussionist, so far as the care of the sick in Russia was concerned under the socialized method. He made the statement that at least it is certain that medical practice is to come to a trial in the United States, under some form of insurance, and that the doctors had better be on a mangement board rather than to stand aloof and thus be in the light of selfish participants so far as the lay viewpoint is concerned.

The negative side, or the minority report, was presented by Alfonse M. Schwitalla, S. J., Ph. D., Dean of the St. Louis University. He emphasized the fact that because his collar buttoned in the back instead of the front, he did not think his opinion should be taken on any other basis than that held by the eight M. D's. who signed the minority report with him. This minority report might well be said to represent the American Medical Association. The dean agreed with the importance of strengthening public health work. Also with the majority report in the better training and the better management of specialists. He believed that the survey had done very much good. He said that it went almost by assumption that a minority report would be necessary, and that it emphasized automatically the major points of the majority report. One of the strong points he made was that medicine must not rest on a basis fundamentally socialistic or on a basis of economics. The care of the sick of the country is to be put on a broader basis than either. He laid very great emphasis upon the personal contact between the patient and the doctor, and that the minority report stresses the fact that nothing can take the place of the personal feeling of the doctor toward the patient as an individual nor of the feeling of the patient toward his doctor. No such personal relationship can possibly be transferred to a group built up around a hospital or in any other way. Mass production, in other words, is O.K. for some lines, of commercial kind, but mass analysis so far as the treatment of patients is concerned, is unthinkable. The dean interpreted the minority committee as believing that groups of any kind are inclined at best to have commercial tendencies, and are thus dangerous.

The dean believed that some of the criticism which is so prevalent as to the work of the committee was entirely unfair and unjust. He says the survey has done a great deal of good, even if it does not yet point out the way of progress. He believed that the medical profession had the right to self-determination, and believes further that the majority of the committee tends to coerce this right on the basis of financial and socialistic tendencies of the present day. He thinks the majority report might have been better five or six years ago, when the principal of salesmanship and financiering was at its zenith. These things have now gone to the bottom of the curve, and he believes that an insurance plan now is not promising of stability or permanency. He believes the majority report is more concerned with the cost than the real care of the patient. He does not agree with the statement that medicine must accept socialization changes so prevalent for the day. He believes that exaggerated adaptation spells death.

Dr. Fishbein closed the morning with one of his fiery talks, and he pointed out that every member of the congress had had its bibliography taken, and that everybody knew in advance exactly what opinion he would have when he got through, and the report of the Committee on Costs proved it. He further stated that the majority reporters had spent $10,000 on preparatory publicity just prior to releasing the report. Commercial clubs, lay clubs, and the many avenues of the lay press were used to prepare the public mind for this majority report.

The notes given in this report represent a small but important part of the 29th Congress of the A. M. A. Council on Medical Education and Licensure. During all these years progress has seemed to come by periods. This year there was a feeling that the association was entering a new development period and that the problems presenting were rather more vital than usual.

ECZEMA*

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Twenty-five years ago the diagnosis of "eczema" was made on fully one-third of all patients presenting dermatologic problems. Today this diagnosis is entered on the records of less than five per cent of these cases. This difference is not due to an increased incidence of other dermatoses nor to any great strides in preventive or therapeutic dermatology, but is the result of a better understanding of etiologic factors together with an improved ability to differentiate other entities from eczema.

This diagnostic evolution has had an anologue in general medicine. I refer to "biliousness", which was a few decades ago the great dumping ground for abdominal complaints, now recognized as peptic ulcer, gallbladder disease, colitis, appendicitis, etc. Eczema has likewise been the scrap-heap of dermatology, and from this scrap-heap have emerged such entities as impetigo, scabies, pyodermia. dermatitis herpetiformis and dermomycosis.

The process of entity differentiation is by no means completed. When it is, perhaps eczema will no longer exist. At the present time, however, the very word, "eczema", strikes fear to the hearts of many people. Who has not heard this question, "Doctor, it isn't eczema, is it?". And do we not find an abundance of newspaper advertisements of so-called "eczema cures", which by their very context aggravate the feeling of hopelessness which many of the victims of this disease have.

What, then, is eczema?

Simple and yet comprehensive definitions are difficult to find, but have been formulated by such masters as Sabouraud, who says "Eczemas are those vesicular or weeping eruptions of the skin of which we are ignorant of the cause," and by Bloch, "Eczema is the response of the skin to an eczematogenous irritant to which it is sensitive." As we consider the meaning of these two definitions and attempt to correlate them, we find that the statement of Reuben Friedman is quite comprehensive in that it embraces the consensus of opinion of the majority of dermatologists of our present day. He states, "Eczema, in fact. is the response in the form of simple dermatitis, of the skin of a predisposed individual, to an eczematogenous irritant to which it is sensitive. Eczema, in theory, is a polymorphous clinical syndrome which automatically becomes a true cutaneous disease entity when the problem of its etiology is solved."

We regard eczema as having certain cardinal characteristics: These can be easily recalled by the simple formula of two "m's" and three "i's" —the "m's" standing for moisture and multiformity, the "i's" for indefinite outline, itching and infiltration. Patchy eruptions with these characteristics have for many years been unhesitatingly diagnosed as eczema. We now know, however, that careful study of these cases shows many of them not to be eczema.

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The conception that eczema results from "stomach trouble," "too much acid in the system," "bad blood," "endocrine dysfunction," or "nervousness," remains entirely too prevalent. That endocrine dysfunction may produce changes in the integument is true, but none of these changes are eczematous in character. Nervousness may frequently aggravate an eczema, but it is probable that an extremely small percentage of eczemas result from the sympathetic imbalance associated with emotional disturbances.

The metabolic theory of the causation of eczema has until recently been most widely accepted. It holds that the predisposing, and in all probability the precipitating factor, in the production of eczema is an internal or metabolic disturbance. This theory is supported by the fact that certain foods and certain drugs, when taken into the body of a sensitized individual, produce an eczematoid dermatitis. It would seem reasonable that such metabolites. as urea, uric acid and creatinin, might be capable of causing an allergic reaction in the skin. That this is not true has been shown by the investigative work of Michael, who placed these substances in contact with the skin of eczematous patients and gave them intravenously with negative results. Bloch of Switzerland, who has also made extensive investigations in pursuit of this theory, concludes that there is a complete failure in showing that metabolic disturbances are pathognomonic for this condition of the skin, and he further states that viewed from the standpoint of physiological chemistry, eczema is not a metabolic disease.

Many investigators in this field have felt that eczema results from but one cause or one type of cause. However, it is now a well proved fact that the same cutaneous picture, both from a clinical and from a histologic viewpoint, may be produced by a great variety of causes. For example, the eruption in an infant which may be alternately cured or exacerbated by the discontinuance or re-institution of whole cow's milk differs in no way from that in another infant in whom feathers are found to be the cause. And yet there are those who would call the first mentioned eczema and the second dermatitis, and still others who say that neither child has eczema because the etiology is known in both instances.

Again, it has been observed by Pusey, Bloch and many others that those vesicular and vesiculo-squamous eruptions occurring on the hands, seen most frequently in warm weather, are the result of sensitization to ringworm fungi, and are no different morphologically or histologically from an eruption produced by an external irritant, as for instance the so-called baker's eczema due to wheat flour irritation. A few years ago we considered all such eruptions "eczema" with a vague background such as an error of metabolism or an endocrine dysfunction.

With this introduction to the present concept of eczema, which we must admit is an ever-changing concept, let us turn to the more practical problem of relieving the patient.

A. DIETARY MEASURES

It is undoubtedly true that eczema may be caused by the ingestion of a food or foods to which an individual is specifically sensitized. Food eczemas are fairly common in infants and quite uncommon in adults. Allergic reactions to food in the adult are much more frequently manifested as urticaria or angioneurotic edema than as eczema.

Scratch and intradermal tests for food allergy are occasionally helpful in the infant but leave much to be desired, and in the adult they assume a role of extremely minor importance.

Our usual experience has been that even though foods incriminated by scratch or intradermal tests are eliminated from the diet, the eczema continues in all its glory. When it is felt that food is a factor in the production of an eczema, elimination diets are worthy of trial, and frequently prove of more practical value than restrictions based on scratch or intradermal tests. This procedure will of course necessitate the intelligent cooperation of the patient or, in the case of a child, the parents.

Another practical plan of dietary management has been worked out by Rowe, who recommends starting the patient on a diet restricted to those foods least likely to produce reaction, gradually adding to these and noting carefully any reaction attributable to a newly added food.

While dietary restrictions are frequently of benefit in the infant or growing child they are rarely so in the adult, and it is our belief that the responsibility of a single food or foods in the production of eczema has been greatly exaggerated.

B. EXTERNAL IRRITANTS

The more carefully we study cases classified as eczema, the more frequently we discover the etiologic factor to be an external irritant.

It matters not whether we call the phenomenon responsible for this inflammatory reaction of the skin, allergy, idiosyncrasy, or hypersensitiveness. Of vital importance, however, is the identification and removal of the irritating substance responsible for the reaction.

In seeking a cause the distribution of the eruption may be a valuable aid. For example, when confined to the face in a young woman, cosmetics are at once suggested, or, when on the hands of a workman, some irritant associated with his occupation. Who of you has not seen eczematous eruptions confined to the contact areas of a wristwatch. gloves, or spectacles, thereby definiley establishing a sensitivity to one of these articles? And so one could go on quite indefinitely naming possible irritants which might produce eczematous eruptions.

Occasionally the time of day, day of the week, or season of the year may offer the clue to a specific cause. A noteworthy example is that of Oliver's patient, whose eczema, always worse on Monday, was found to be due to the irritating action of para-red dye in the rotogravure section of the Sunday paper. The detection of these unusual factors may prove extremely difficult, but satisfactory and lasting relief is obtained by no other means.

When difficulty is encountered, we have found that a carefully kept diary, in which the patient records all contacts, enables us to select from his environment possible offenders. These suspected materials are then checked by means of the patch or contact test, from which more definite information is obtained. The suspected substance is placed on moist gauze, 2 cm. square, and applied to the skin. Waxed paper, cellophane or gutta percha is applied over it, and the whole is held in place by means of adhesive tape. When removed in twenty-four hours a positive test may be manifested by any degree of reaction from erythema to vesiculation or even local necrosis. In nearly all cases, if a substance is an irritant to the patient's skin, a positive reaction will be present at the end of twenty-four hours.

It is a well established fact that these sensitivities are frequently multiple, in which instances the removal of a single known irritant is not followed by relief, and a painstaking investigation along these lines is made necessary.

C. THE RINGWORM FACTOR

The determination of ringworm fungi as an etiologic factor in eczematous eruptions, particularly of the hands and feet, marks an epoch-making advance in dermatology.

An extremely high per cent of all eruptions which satisfy the morphologic criteria of eczema. are now known to be caused by these organisms. Eczemas on this basis of etiology may be due either to the immediate presence of the fungus at the site of the eruption, or may be an allergic epidermal response to circulating toxins, generated at some distant focus, usually the feet. Eruptions due to these toxins are known as trichophytids, and may be fairly generallized, or, more frequently, limited to the hands. Proof of the true nature of these trychophytic eczemas may be established as follows:

1. The fungus cannot be recovered from the eczematous eruption, but can be recovered from the primary focus which is usually on the feet.

2. The patient exhibits a positive reaction to intradermal allergic tests with an aqueous extract of ringworm fungi known as trichophytin.

3. The eczematous eruption should involute when the primary focus of ringworm infection is eradicated.

In summarizing, it has been our purpose in this paper to review the present day concept of eczema and to present a method of study which will disclose its etiology.

It is indeed paradoxical that in a paper on eczema we have discussed chiefly things which by definition we could show were not eczema. We hope that there is a dermatologic Utopia which will in time be reached, where the cause and cure for all cases of eczema will be found. But today, there exists a certain group of cases, though gradually growing smaller, which are still eczema.

DISCUSSION

ALFRED SCHALEK, M. D., (Omaha): I consider Dr. Tomlinson's paper one of the important papers in the program of the Association because it does not appeal only to the dermatologist, but to every practitioner. It seems paradoxical that a disease like eczema, which is so common and treated by everybody, is so little understood. Most of the physicians who take care of eczema do not know how to manage it correctly, and usually stumble from one external application to another, and frequently give it up entirely.

I am very glad to see that Dr. Tomlinson did not say very much about local treatment, because it is about the same today as it was thirty years ago. It will do some good at one time and not the next, and if relieved as a rule, the eczema will recur.

Dr. Tomlinson has shown that our belief of the entity of eczema has been cut down more and more all the time. It may be due to faulty metabolism, to allergy or to a predisposition to external irritation, or to ring-worm infection.

All these cases are not eczema, and should not be called so. I want to go still further to say that I do not believe there is any such thing as eczema. I think eczemas of obscure origin will eventually be discovered to be due to some cause and that they all are a symptomatic manifestation of the skin.

Now, if you get a case of eczema under your care, the first thing is not to decide what kind of drug to use, but to find out, if you possibly can, to what it is due.

As an illustration of what that will lead to, I should like to relate a case of a girl of ten years who had eczema since she was born. It broke out anywhere and everywhere on her body. The treatment relieved her for a while, but the eczema came back. Finally the home Doctor said, "It is hopeless."

I set my mental machinery to work and figured out there must be something that had affected her ever since she was a baby. She has changed her habits and surroundings and contacts, but a certain food she has not changed, and that is milk. We made a cutaneous test and patch tests, and got violent reactions. We gave orders to leave out from her diet milk, butter, cheese, custard, and everything else in which milk was used. Five months later her mother wrote that it was the longest period the child had ever been free from eczema.

I believe articles like Dr. Tomlinson's are of great practical value to the general practitioner, and he should be commended highly for it.

DR. TOMLINSON, (closing): I have nothing to add except to stress further that the real problem in eczema is that of determining the cause. Also that many cases which satisfy the morphologic criteria of eczema are caused by ringworm fungi.

THE INTERPLAY OF SCIENCE AND PRACTICE IN THE HISTORY OF MODERN MEDICINE

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IN TWO PARTS—PART TWO

Up to the Nineteenth Century the Germanic countries had contributed very little to medicine. The "Old Vienna School" of the Eighteenth Century boasted of some good clinicians among whom was Leopold Auenbrugger whose discovery of percussion was igiored until Corvisart recognized its importance. In general, however, the Germanic world was at a very low ebb because of continued war and governmental oppression. The Thirty Years War (1618-1648) weakened and ennervated Germany so completely that the harmful effects can be traced for the next two hundred years. At about the time that recovery from this horrible struggle began, the Napoleonic Wars again converted Germany into the battle field of Europe. War, political discord, and tyranny—in this unfertil soil science and medicine could hardly be expected to thrive. As a reaction against their unhappy condition, the intellectual classes in Germany developed a highly imaginative transcendental philosophy which lifted them out of the mire of unpleasant realities into the realm of romantic fancies. This reactionary romanticism invaded medicine and science with very unhappy consequences. The philosopher, Friedrich - Wilhelm - Joseph von Schelling, originally a physician, founded the School of "Natural Philosophy" in medicine. The absurdities of this school are almost beyond our comprehension. "Their method of studying nature was imagination"(6). Their definitions were an unintelligible jumble of words. Concerning the books of this period Jacobi wrote "The books of several decades of that period are absolutely obscure, obtuse, unintelligible and verbose. That they ever taught anybody anything is impossible. it is impossible to translate them today into any—even German—language. Inflammation, for instance, in the words of the elder Marcus was the condition in which 'the electrical essence is affected in the dimentions.' As a half hearted reaction against the School of Natural Philosophy there arose the School of "Natural History" in Medicine, the chief founder of which was Johan Lucus Schoenlein. A few examples of their classification of disease will serve to show how little, if any, they had improved upon the loose jargon of their predecessors. The various diseases were regarded as a sort of "retrogression to lower grades of evolution." Rachitis signified a return to the mollusca because the bones became soft—"individuals suffering from certain digestive disorders had descended to the rank of cattle. That the tongue got white, the urine sedimented and eructation and vomiting occurred all indicated a tendency to rumination"(3). This, in brief, was the deplorable condition of German medicine at the beginning of the Nineteenth Century when the Paris School was carrying on its brilliant work. Uncontrolled imagination and speculative philosophy completely dominated German medicine and the reaction against this state of affairs lead to some interesting mistakes, before equilibrium was finally brought about.

The leaders of the Vienna School at this time were Carl Rokitansky, the brilliant pathologist, and Josef Skoda, the internist. The reaction here consisted, at first, in the adoption of the methods of the Paris School but an essential and important digression soon developed. The remarkable fertility of the Paris School was a result of the perfect balance between the science and practice of medicine, pathological anatomy was an aid, not the master of clinical medicine. In Vienna this equilibrium was soon upset. Rokitansky declared that "pathological anatomy should be the base not only of the knowledge of physicians but also of their practice, as it contains all there is in medicine of positive knowledge and is the foundation of it"(3). Skoda was busily engaged in studying the mechanical basis for the various signs elicited by percussion and auscultation. He refused to recognize definite disease entities and pathognomonic signs and insisted upon over-emphasizing the fact that he could detact consolidation but not pneumonia, mucus in the bronchi but not bronchitis, etc. He agreed with Rokitansky's statement and as summarized by Faber(3), "entirely subordinated clinical medicine to pathological anatomy and made anatomical diagnosis in the literal sense of the word, the end and object of his efforts." The end result of this state of affairs is seen in the great advances made by Rokitansky in the science of pure pathology and the meagerness of the contributions of Skoda to the practice of medicine. As a result of this unbalanced condition the Vienna School developed a marked therapeutic nihilism, treatment was of no consequence; the practice of medicine had completely lost sight of its main purpose and of its own problems—it became interested only in predicting the autopsy findings.

In Berlin a similar but more interesting reaction was taking place. From Paris came the voices of Broussais and the great physiologist, Francois Magendie. Broussais called the methods of the Paris School "Ontology," he claimed that they were setting up metaphysical concepts and mistaking them for realities, their specific diseases were merely products of the imagination. Magendie extolled the importance of exact experimental methods—"Pathology is the physiology of the sick man" and should be investigated by the same exact methods which are used in experimental physiology. Obtain facts by accurately controlled methods. The young generation of German physicians were in revolt against the nonsensical speculations of the "Natural Physiology" and "Natural History" Schools of Medicine and everything which bore the slightest resemblance to metaphysics and ontology was extremely distasteful to them. The exact, quantitative methods of physiology and chemistry were powerful antidotes against the loose thinking and jumbled word pictures of German Medicine.

Broussais ridiculed clinical observation and the empirical description of distinct disease entities and advised that function be studied instead. Magendie called to clinicians to desert the clinic and begin a laboratory study of disease. These far cries from Paris sounded the keynote of the new school of German "Physiological Medicine." Every outstanding clinician established a laboratory in connection with his clinic. The clinic supplied problems and materials for his investigations in physiology and biochemistry. Careful clinical observation and a study of cases so fruitful in the hands of Hippocrates and Sydenham were forgotten. This was a great and fertile period for the science of medicine but a relatively barren one for the practice of medicine. There was tremendous activity and enthusiasm but the discoveries were in chemistry and physiology, not in medicine. Open a comprehensive text book of physiology or chemistry of a generation ago and you will find the work of Ludwig Traube, Friedrich von Frerichs, Carl Wunderlich and many other German clinicians recorded there. The genius of Rudolph Virchow gradually began to dominate clinical medicine just as Rokitansky dominated it in Vienna. Virchow was using the microscope and cellular pathology was unfolding its alluring doctrines under the guiding touch of his genius. Virchow soon became a dominating figure in German medicine. Here then we have an interesting and instructive epoch. Medical science as exemplified by physiology, biochemistry and pathology completely dominated and overshadowed practical medicine. The immediate results of this unbalance are interesting and illustrate the disastrous results which are bound to occur when clinicians become laboratory scientists. Faber(3) points out the clinical errors of German Physiological Medicine in three important diseases, *tuberculosis, diphtheria,* and *variola.* These fundamental errors were largely the result of the dominence of pathological anatomy. The masterly clinical and pathological studies of Laennec had resulted in a correct understanding of tuberculosis. Laennec recognized the unity of the disease and realized that the different types of lesions were different stages of the same process. Virchow's microscopic studies lead to the discovery of the microscopic structure of the single tubercle. Caseation was believed to be a separate process and was sharply delineated from the tubercle. Virchow believed that all tubercular phenomenon were simple inflammatory processes that might later develop caseous metamorphosis. Scrofula was again separated from tuberculosis. This concept was taken up by the clinicians and finally lead to a state of confusion in which they regarded the initial stages of phithisis as chronic catarrhal pneumonia or croupous pneumonia; caseous metamorphosis and cavity formation might develop later. This state of confusion is summed up in the famous statement of Niemeyer(3), "The greatest evil that can happen to a consumptive is that he should become tuberculous." In diphtheria the results were equally confusing. Pierre Bretonneau of the Paris School had recognized that true diphtheria and croup were in reality one and the same disease. Virchow's microscopic studies lead to his distinction between croupous and pseudomembranous inflammation which in turn lead him to distinguish sharply between croup and diphtheria in which he was followed by the clinicians. Ferdinan von Hebra, dermatologist of the Vienna School, confused variola and varicella and believed them to be the same disease because the microscopic pathology was similar. These few examples serve to show the condition of German medicine during this period. Clinicians were engaged in physiological and chemical studies and were neglecting careful study of clinical material. The brilliant studies of Virchow, detached from clinical observation, were allowed to predominate and confusion resulted. In view of the existing state of medicine, the errors were natural and the same retrograde process may occur in clinical medicine at any future time when clinicians fail to recognize that clinical study is the Polar star of navigation in the unchartered seas of practical medicine.

A broad analysis of this period of German medicine, in retrospect, shows some justification for their views. In a very strict and narrow sense we may perhaps agree that the empirical grouping of symptoms to form definite disease entities was to some extent premature. From the vantage point of the Twentieth Century we can readily see that the missing factor was a definite knowledge of etiology. Within a very short time the epochal discoveries of Pasteur and Koch in bacteriology altered the whole outlook and suddenly established an etiological basis for many diseases. As each new discovery of a specific causative organism was announced it resulted in triumph for the ideas of the Paris School and justified their methods and much criticized ontology.

The period of German Physiological Medicine was of short duration and lasted from approximately 1842 to 1870. We must not magnify its errors and must recognize its benefits. As German clinical medicine wheeled into line after this short period of flirtation, German clinicians possessed a broad background in medical science which proved of tremendous value. Before the physicians of other countries recognized the importance of medical science, German physicians were profiting by their years of preparation in the laboratory and when equilibrium between science and practice was once more established German medicine took a leading position which it has maintained until our time.

It is interesting to note that some of the fundamental unbalance of German medicine has gained entrance into our own system and is only slowly being eradicated. I refer to the dominance of pathology. We inherited a scheme for the practice and teaching of medicine in which the heavy influence of Virchow and Rokitansky was still greatly in evidence. Text books of medicine still retain and medical schools still teach classifications of disease based upon gross post mortem or even microscopic characteristics. Classifications of this type are of absolutely no use to the physician at the bed side and are often an actual hindrance. How long will it take for clinical medicine to realize that it must have its own workable classifications of disease and throw off the classifications of the pathologist? A start has been made but progress in this direction is still hampered by the past.

The ebb and flow of the science and practice of medicine in the past brings an answer to many of our so-called modern problems. For one thing it is quite obvious that it is not so much a question of teaching more or less of the science or practice of medicine, within reasonable limits this can easily be adjusted, the great problem is to teach and to employ a proper balance between science and practice. Physicians who are fundamentally engaged in the care of the sick must never lose sight of the dignity nor of the problems and needs of practical medicine which can only be fulfilled by bedside observation. A brilliant example of the methods and results of clinical observation has occurred in very recent times. Prior to 1917 the vascular diseases of the extremities were in a grossly confused state. Raynaud's disease and arterio-sclerotic gangrene formed clear cut pictures but between these extremes was a group of confused and illy defined vascular disturbances which often lead to gangrene in young people in the pre-arterio-sclerotic age. Various names such as pre-senile gangrene, etc., only emphasized our ignorance and added to the confusion. Out of this confusion, Leo Buerger, by a careful study of cases and a clinico-pathological analysis definitely isolated the clear cut disease entity which now bears his name. This brilliant achievement could not have been accomplished by pure physiology, pathology or chemistry; it was essentially a clinical problem and was solved by clinical observations and study. Now that the condition is clearly recognized medical science hopes to discover the etiology and the method of prevention. How many more clear cut disease entities are being seen but not recognized and are awaiting the same methods of study, time alone can tell.

To teach future generations of physicians the proper respect for a perfect balance between the science and practice of medicine is the duty of the medical school. It is obvious that in general this can best be accomplished when the professors and instructors are fundamentally physicians who have had good clinical training to which has been added special training in their respective fields. Training in clinical medicine is the only type of training which enables one to realize the truth of the statement that a sick man is more than the sum of his constituent lesions, more than the sum of his unbalanced chemical equations or physiological alterations; only when this empirical fact is fully realized can we produce the highest type of practitioner of medicine. Although there are many brilliant exceptions, it is in general true that the unadulterated PhD. in chemistry, pathology, or physiology fails to understand the importance and the real problems of the practice of medicine and conversely the physician with no additional training in the fundamental sciences often fails to recognize the need for and the importance of these subjects. History points the way and if we heed we may avoid ruinous periods of retrogression in either the science or the practice of medicine.

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OSTEOMYELITIS OF THE MANDIBLE

MAX EMMERT, M. D.,
Omaha, Nebr.

E. C., aged 12, was referred September 11, 1924, because of a swelling of his cheek and neck.

Past history: His past history was negative.

Present illness: Nine days ago he consulted a local dentist who treated a decayed tooth. Pain started immediately after the treatment and the tooth was extracted two days later. Immediately following the extraction the lower left jaw started to swell which has increased. He has suffered from little pain but the temperature has been 104.

Examination revealed a marked swelling of the left face extending beneath the maxilla, very firm in character with point of maixmum tenderness beneath anterior portion of maxilla. Slight swelling on the right side. Area of extraction (lower cuspid) filled with necrotic tissue exuding pus. Gums on both sides of mandible spongy with some necrosis. X-ray of bone negative.

Operation: Incision beneath maxilla—exploration of mandible for area of necrosis. None seen. No pus pockets found. Several edematous lymph glands removed. Drainage established. Tooth area lightly curetted. Gums separated from both sides of maxilla exposing extension of process from mid-line to angle of jaw. Pus and necrotic tissue removed with gauze. One very loose tooth removed. Others loose. Swabbed with iodine and iodine wicks placed beneath gums.

Bacterial examination—Staphylococcus tetragenous. September 13, 1924, incision and drainage of the right sub-maxillary region and submental region. On September 16 the temperature rose to 105°, pulse 140 and patient was stuporous. On September 17 the gums looked better though large amount of pus exuded. Frequent mouth irrigations of salt solution were used over a period of several weeks. Later x-rays revealed marked osteomyelitis of the entire maxilla. The patient left the hospital with discharging sinuses on both sides.

January 23, 1925—Patient returns with the following story. One week ago the local physician removed a piece of bone from the sinus in the left side. X-ray report January 24, 1925—"The plates taken of E. C's. jaw at this date show a heavier deposit of bone than those previously taken, also a very active periostitis with bone production. The lower right jaw at the anterior and lower edge shows a sequestrum."

January 24, 1925—All teeth of lower jaw were removed by a dentist following which I removed a number of spicules of dead bone from the right side and a large sequestrum from the left side, together with several smaller spicules. While no bone could be felt on the left side there was a firm ridge of tissue which felt like cartilage.

Sequelae—Patient developed into a husky lad but had a sinus until April, 1932, at which time the local physician removed a small sequestrum, after which the sinus closed. He writes that there is considerable bone formation in the maxilla with considerable deformity which probably will require plastic surgery for correction.

COMMENT

Virulent osteomyelitis of the lower jaw, fortunately, is a comparatively rare disease. It usually follows fracture or extraction of a tooth. After the condition becomes extensive I question the advisability of removing loose teeth or other extensive surgical procedure until local resistance to the organism has been established and the process has become chronic.

TUBERCULOSIS ABSTRACTS

WHAT IS NEW IN TUBERCULOSIS PATHOLOGY

Sir Humphrey Rolleston, who reviewed the subject of non-pulmonary tuberculosis, dwelt especially on chronic hyperplastic tuberculosis of the intestines and the accompanying hyperplastic peritonitis. He made the interesting suggestion, proposed by preceding investigators, that these unusual forms of tuberculosis, in which tubercle bacilli are difficult to find, might be due to different phases of the several stages of the life cycle of the bacillus of tuberculosis, recently described by several investigators.

Drs. Petroff and Winn of Trudeau, New York, reported further developments in their study of colony variation in the growth of avian tubercle bacilli. From a single strain of this bacillus they separated out four types, the extremes of which formed "smooth" and "rough" colonies on culture media and were respectively virulent and avirulent for chickens.

A paper presented by Dr. Daines of Salt Lake City may explain some of the positive tuberculin reactions reported from time to time leading to slaughter of cattle subsequently proved not to be tuberculous. He described acid-fast bacteria, apparently not tubercle bacilli, obtained from certain skin lesions of cattle reacting positively to tuberculin, but not tuberculous, as shown by post-mortem examination. The bacteria, which appeared to be a previously undescribed variety, and the skin lesions they caused, evidently induced a sensitization to tuberculin.

A complicated life cycle of the tubercle bacillus, in which several granular phases occur, was reported by Dr. Kahn of Cornell University. He embedded single colonies of tubercle bacilli growing on solid culture media and sectioned them. Stained by the usual methods for tubercle bacilli, sections showed zones of acid-fast, partially acid-fast and non-acid-fast bacteria, conforming closely to the types previously described by Dr. Kahn in his cultures from single organisms.

At a later meeting Dr. Wyckoff of the Rockefeller Institute, New York, also presented a paper on the growth of tubercle bacilli, which was apparently not in agreement with Dr. Kahn's work. Dr. Wyckoff used the ingenious method of motion photography of the growing bacteria on clear solid media. Several kinds of tubercle bacilli, chiefly derived from tuberculosis of cold blooded animals, reproduced by the simplest of all methods, elongation and fission into two new organisms like the original.

Another paper, presented by Drs. Soper, Alpert and Adams, dealt with the relative immunizing properties of a "smooth" type variant of bovine tubercle bacilli, killed by heat, the well known living attenuated BCG strain of bovine bacilli, and living human type bacilli. The heat-killed bacilli caused the greatest protection. Dr. Willis of Detroit described a surprising frequency of tubercle bacilli in the urine, as well as sputum, of children with childhood type tuberculosis.

The second symposium was devoted to silicosis. (A forthcoming number of Abstracts will be devoted to this subject).

PROGRESS IN RESEARCH

A third symposium was given to reports from investigators working under grant from the National Tuberculosis Association. Dr. Richardson of Cornell University reported experiments by himself and colleagues on the respiration of tubercle and related bacilli. The most significant fact was the high sensitivity of the pathogenic acid-fast bacteria to deprivation of oxygen, a characteristic probably playing a role in the limitation of their growth in the animal body.

Several papers dealt with the proteins of tubercle and related acid-fast bacilli. It was brought out clearly by several investigators that the pure proteins of these bacteria are capable of sensitizing the animal body so that subsequent injections of the same material into the skin elicit an inflammatory response much like that caused by tuberculin in the tuberculous animal. Dr. Aronson of the Phipps Institute, reported that while the protein MA100 almost exactly paralleled Old Tuberculin as skin-testing material, it possessed the capacity, on repeated injections in children, of sensitizing the skin so that false positive reactions were given with later higher dosages.

Dr. Sabin and colleagues of the Rockefeller Institute reported results of similar import from animal experimentation. Their results on inoculation of animals sensitized to one of the proteins of the tubercle bacillus also brought out clearly that the sensitization conferred no increased resistance to infection.

Dr. Seibert of the Phipps Institute reported experiments indicating that the sensitizing character was referable to the high molecular weight of the proteins, and showed that by two methods it was possible to reduce the molecular weight and prepare pure protein substances with full skin-testing potentiality and accuracy, but virtually devoid of sensitizing character. The first consisted in boiling one of the purified proteins in weak alkali (pH 9.0-10.0) and again isolating the protein. The second in isolating the protein directly from an Old Tuberculin prepared by the usual heating method, but derived from a culture on a non-protein synthetic medium instead of the usual glycerol-peptone-meat infusion broth.

From the discussion following, which was opened by Dr. Long, it seemed clear that the preparation finally to be recommended to replace the O.T. of common use, was a protein of non-sensitizing character but full potency isolated by one of these methods, and Dr. Long reported that a plan was under way to make an objection-free preparation available shortly.

Two papers were presented by Drs. Mariette, Fenger, Duncan and others from the Glen Lake Sanatorium, which showed a surprising lack of specificity in both the pure lipoids and pure proteins of the acid-fast bacilli when used respectively in serological and skin tests. Purified protein prepared by the method for MA100, but from timothy instead of tubercle bacilli, appeared even more potent than MA100 in eliciting skin reactions in tuberculous subjects.

At the final session Dr. James Alexander Miller of New York called attention to the newly recognized frequency by hematogenous as well as bronchogenic spread in pulmonary tuberculosis.

Drs. Wiseman and Doan of Ohio State University reported progress in their work on blood changes in tuberculosis, showing that not only do important changes in the number of lymphocytes occur, but that qualitative variations, referable to age, occur in the lymphocytes, which are of considerable prognostic significance.

Drs. Schroder and Park of New York compared the effect of dead tubercle bacilli and living BCG in inducing tuberculin sensitiveness in children. Positive Mantoux tests occurred in almost all of the children receiving BCG, and in only about a third of those getting dead bacilli, and sensitiveness lasted longer in the former group.

Dr. Burke of Ray Brook, New York, showed that it was possible by intratracheal injection of tubercle bacilli in normal and tuberculous rabbits to produce forms of tuberculosis roentgenologically and pathologically comparable to childhood and adult tuberculosis in man, a result of obvious value for studies on the pathogenesis of the two types of the disease.

Drs. Johnston, Howard, and Maroney of Detroit gave some long-desired data on the development and course of the tuberculin reaction following first infection in childhood. Frequent tuberculin testing and x-raying of a group of children showed that the progress of healing childhood infection from primary lung infiltration to calcification of the corresponding hilum lymph nodes, averaged about two years, during which the tuberculin reaction became positive, reached a maximum of intensity, and then waned to a lower level.

An experimental study by Dr. de Savitsch and colleagues from the University of Chicago on the effects of a combination of irradiated ergosterol or parathormone with tuberculin in tuberculous animals, not only confirmed previous results on the calcifying action of the first two substances for tubercles, but indicated also that it may be possible to enhance this effect by increasing the blood supply around tubercles by the focal reaction following injection of tuberculin.

PRESENT-DAY TRENDS OF PRIVATE PRACTICE IN THE UNITED STATES

Morris Fishbein, Chicago (*Journal A. M. A.*, June 11, 1932), calls attention to the fact that great progress in medical science has substituted for the family physician a complex system including hospitals, laboratories, technicians, dieticians, nurses, and a greatly increased equipment and personnel. He believes that the family physician will always be the most economic and practically the most satisfactory physician for 90 per cent of human ailments. The remaining 10 per cent of human ailments require hospitalization and specialization. Modification of the curriculum or abbreviation will not lead to a greater number of general practitioners. The rewards of general practice must be made attractive in comparison with the rewards of specialization. The general practitioner must become increasingly a practitioner of preventive medicine, and people must learn that preventive medicine is, like curative medicine, to be paid for, particularly because it is always worth more than it costs. Organized medical practice in the form of groups, university clinics, industrial medicine, insurance practice and contract practice may have definite fields in medical practice. For the good of the public and for the advancement of medical science, they should limit themselves to the fields for which they are fitted. People must learn to save for sickness as they now save for luxuries or in anticipation of death. If the people cannot be educated to saving for sickness, voluntary health insurance or even compulsory health insurance will probably come. The physician in private practice will not disappear. Under every compulsory health insurance system, and even in Soviet Russia, he persists because only a personal physician can function efficiently in a vast number of types and cases of disease. Until human bodies and minds are standardized—an antibiologic conception—individual mutual responsibilities between patient and physician must be maintained.

LOWER FAT DIET IN DIABETES

A group of 150 diabetic patients treated by Joseph H. Barach, Pittsburgh (*Journal A. M. A.*, April 9, 1932), with lower fat and higher carbohydrate diet required no more insulin in most cases and less insulin in many. The author emphasizes the fact that the low fat diet is more satisfactory to the patient and complications of the disease are reduced.

EPHEDRINE IN ADAMS-STOKES' SYNDROME

J. Edwin Wood, Jr., University, Va. (*Journal A. M. A.*, April 16, 1932), calls attention to the fact that epinephrine has been used with success to abolish the temporary ventricular standstill of Adams-Stokes' syndrome. The transient nature of its action and the necessity for subcutaneous administration represent two palpable objections to this drug. Ephedrine largely overcomes both of these difficulties, as it exhibits an epinephrine-like action over a more prolonged period and may be administered orally. These considerations and three favorable case reports in the literature led the author to the use of ephedrine in an instance of severe Adams-Stokes' disease. After barium chloride had failed, ephedrine by mouth stopped the seizures. Continued oral administration of ephedrine has prevented further attacks over a period of eighteen months.

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STANDARDIZATION OF MEDICAL PRACTICE

More than a passing interest should be taken by the profession in the editorial in this number by one of the councilors, "Shall Medicine Be Reorganized Under the N.R.A. Code?" Like President Roosevelt, he at least is trying to do something.

One of the first reactions of many may be, "We cannot standardize fees." Why can it not be done? With a whole hearted desire to do, almost anything can be done, has been done. The workings of the N.R.A. Code already have demonstrated that a lot of things can be done, that a year ago were thought impossible of accomplishment. Towns are being standardized according to population for trade purposes; might not something along the same lines be worked out for the medical profession? This is only one phase, mentioned by way of example. The major problem involves the regulation of what may be called unfair practice.

There has always been a lot of can't about any proposed innovations affecting the status of the medical profession and much of this has come from men who like to pose in the limelight as the great and holy in medicine and surgery. Let us at least put on our "thinking caps" and consider the matter seriously. It is not the province of the editor to lead a propaganda, without official sanction; but this much he at least may say: *Let us reason together.*

WIDER USE OF SPLINTS

In *California and Western Medicine,* Harold Crowe discusses some common surgical errors resulting from non-use of splints in injuries of soft tissues that should be read by every general practitioner:

"1. Any wound heals best at rest. Splints produce rest. A small superficial skin abrasion on the flexor surface of the wrist assumed real importance when the boy's parents began to demand an explanation of failure to produce a cure after four weeks. The application of a splint produced a dry closed wound in eight days.

"2. A person suffering from infantile paralysis can be rendered invaluable aid by his doctor, irrespective of that doctor's particular training or specialty, if he is watched for beginning deformity and the deformity prevented by early bracing.

"3. Any acutely diseased or injured joint should be splinted. To make such an obvious statement seems ridiculous. Everyone in the medical profession knows this without being told. But the following cases, seen in the last year from the best county hospitals in California, would indicate the contrary: (a) sciatic nerve injury with knee flexion contractures and severe toe drop; (b) acute staphylococcus infection of ankle joint with 70 degrees equinus deformity; (c) adduction flexion deformity of a hip which became ankylosed after open reduction for traumatic dislocation; (d) flexion and wrist drop after burns to palm; (e) a simple impacted fracture of the femoral condyles with knee flexion contracture. These cases were in the hands of good men. These deformities need never have occurred. All of them required surgical intervention.

"4. Any joint so diseased or injured as to threaten a loss of motion should be splinted in the optimum position for use of a stiff joint and held there in the intervals of treatment, that is, 70 degrees abduction of the shoulder; 90 degrees flexion of the elbow; 40 degrees cock-up of the wrist; hand in position to grasp a large ball (never flat); hip 10 degrees flexion, with abduction according to existing or anticipated shortening; knee 5 degrees flexion; foot 5 degrees below a right angle to allow for wearing a heel. It is common practice to place an injured hand on a flat board splint. This position is the one in which the thumb is absolutely useless. The thumb must not be at the side, but in front of the palm to be used.

"5. In cases of nerve injury any physician may institute good treatment by use of the simple rule that splinting should reverse the tendency to deformity. For example, a cock-up position for wrist drop, extension of the knee in paralysis of the quadriceps femoris, etc.

"6. Splinting can do harm, but that harm is never from the rest or fixation. Damage from any dressing must be due to one of four things—undue pressure on the skin, compression of a superficial nerve, obstruction to normal circulation, or bad position. If the limb is not more comfortable after application of a fixation dressing, if the patient complains of discomfort in a brace, splint or cast, listen to him! When he states his foot goes to sleep in a cast get an accurate description of what part of the foot. Often it will be found that he really means the fifth toe and a small area just back of the first digital interspace on the dorsum of the foot. Such findings indicate pressure on the common peroneal nerve at the head of the fibula. Similarly in other faulty dressings, careful attention to the patient's complaints will disclose real errors in the application of the apparatus more often than not. Never fail to heed your patient if he is wearing a rigid dressing of any kind; bad disposition is the last diagnosis to use in explaining the discomfort of such a dressing.

"To generalize, it is safer to splint an injured or diseased extremity than not. The common fear of losing joint motion is not justified. Rest hastens healing, and rapid healing ultimately conserves motion. Mechanical support relieves pain and muscle spasm; the patient will be more comfortable, and his physician will have less trouble. And finally the fact that a splint was applied is a remarkable proof, in case of legal controversy, that the physician anticipated and attempted to avoid a bad result. In short, splint everything that can be splinted and the percentage of error will decrease."

ALLERGY HINT VII

A diet of trial and error must occasionally be used, especially when a clue is not obtained from skin tests.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT XI

The treatment of the early case is an education, a training. The physician is a teacher. The patient comes, not for treatments, but to take lessons. When he is fully able to take care of himself, he graduates, though he may need post-graduate work.

—Miles J. Breuer, Lincoln.

"THE STORY OF CHILDBIRTH"

A book with the above title, under the authorship of our own Dr. Palmer Findley, noted gynecologist, author and teacher, is before us. One must confess to a sense of pride when a physician of our own state brings forth a book on a worthwhile subject and our pride is accentuated when the subject is presented with compelling force and clarity. We confess to having read the entire book of 376 pages without stopping.

The book is an octavo, bound in dark blue cloth with gold leaf imprints; it contains 124 illustrations, many of which are old woodprints dating from the second century A. D. and on through the seventeenth and eighteenth centuries. The publishers are Doubleday-Doran Company, Garden City, New York. While primarily intended for the lay reader it will be of inestimable value to doctors and nurses as a work of historical references and as a treatise on modern obstetrical problems.

"The Story of Childbirth", begins with a recital of the beliefs of ancient peoples in gods and evil spirits; in the gods that protected the child-bearing woman and in the evil spirits that plagued and harassed her. The taboos of menstruation, marriage, pregnancy and labour of primitive times are the same taboos that chain the expectant mother of today to a dead past. In presenting the subject of maternal impressions it is argued that emotional influences do not and cannot mark the child. The varied positions assumed by primitive races in labour are graphically presented and the midwife, who for centuries was the sole arbiter of life and death, is portrayed and is accorded her rightful place in obstetric practice today. Sterility, abortions, gonorrhoea and syphilis are discussed in an instructive and entertaining manner. The introduction of anesthesia into midwifery and the controversies between doctors and clergy that ensued furnish a dramatic setting, as does the recital of the ravages of puerperal sepsis in the pre-antiseptic days. The chapter on maternal mortality is an indictment of obstetric practice in America, in that the United States ranks among the highest of the civilized nations in maternal deaths. The much mooted subject of birth control is discussed from a sociological, economic and medical standpoint. The author finds no place in the discussion for religious dogmas.

In the final chapters the author inveighs against the abuse of operative intervention in obstetric practice and pleads for a return more nearly to the teachings of the old masters who had faith in nature's forces, who knew the art of manual delivery through the natural passage and who for want of access to the child *in utero* through the abdominal route was impelled to cultivate skill in delivery. The invention of the obstetric forceps and the development of the technic of cesarean section wrested the practice of midwifery from the hands of the imperious midwife. But much abuse has come from these inventions and this abuse had added immeasureably to maternal mortality. The "Story" ends with a pictorial presentation of the modern maternity hospital and a plea for the care of all complicated cases in isolated maternity institutions.

SHALL MEDICINE BE REORGANIZED UNDER THE NRA CODE?

The doctor is an important cog in the wheel of national recovery and has suffered more severely, perhaps, than any one other group in the nation, from the repercussions of the last few years of economic distress.

The doctor is beset in his own relation with other doctors by such unfair practices as fee splitting, fee cutting, contract practice (denying adequate fees), group health clinics, insurance group practice, advertising, charlatanism, and many other devices which are rapidly leading him toward State Medicine, and from which he may now, by organized and closely co-ordinated methods, organize under a "code", which, if endorsed nationally or by the National Recovery Board, becomes in effect federal law, and carried with it adequate penalties for disobedience of such a "code."

As this NRA movement is new, and we are more or less at a loss to know just what constitutes full co-operation, it is my opinion that the state association should formulate a set of rules by which the profession generally should be guided.

This NRA movement has marked a turning point in the economic "set up" for everyone, whether this particular plan succeeds or not, so therefore, every professional man must anticipate and prepare to meet the advent of a new economic era.

I have not formulated any specific measures which will correct the disadvantage to which the doctor now finds himself placed, since he cannot raise the price of his "commodity" to compensate for those salary and time adjustments applying to all his employees other than technicians and nurses.

Many of the doctors over the state are running small private hospitals which do not employ, entirely, registered nurses; those men should be advised by the medical profession itself what they should do, and not allow lay organizations to finally work out such problems which might be distinctly disadvantageous to the profession whose desires to be of service have superseded all others.

I have in mind a radical step which departs entirely from the old Aesculapian code—and that is for us to set up now a basic fee schedule (a minimal charge), a basic code for ordinary services rendered.

I next desire to have set up in such "code" those things which are to be considered "unfair practice", thus giving the doctor a definite target to shoot at; admitting, as we must, that our organized efforts have in the past been directed almost entirely on scientific advancement to the exclusion of our economic welfare, such a movement is distinctly advancement.

I feel that this is the psychological time to regulate ourselves since the matter of ethics and unfair practice has entered the national consciousness.

I am not one who becomes unduly alarmed, but this proposition, namely the NRA, is going to be forced, if it is not accepted voluntarily. Are the doctors going to meet it squarely or have it and its resultant economic changes forced upon them?

We should act now, or at least set up the necessary machinery to enable us to keep apace with labor, industry and business, who are setting up codes and working agreements that have teeth in them to punish the unfair and the dissenters.

—Claude A. Selby, Councilor, North Platte.

THE LINCOLN AND LANCASTER COUNTY HEALTH SURVEY

A health survey made by request of the Lincoln and Lancaster county authorities by Dr. C. C. Applewhite of the United States Public Health Service, resulted in the following constructive criticism:

1. Lack of efficient public health organization and co-ordination has materially interfered with achievement of most effective methods.

2. Outstanding administrative defect of public health work in city and Lancaster county is that it is administered by physicians who devote part time to the job. Part time administration is inefficient and wasteful.

3. General death rate of Lincoln and incidence of communicable disease higher than should be.

4. Percentage of preschool and school children protected against diphtheria, typhoid and smallpox pitifully small in Lincoln and smaller rural areas.

5. Lincoln and Lancaster county financially able to provide adequate whole-time health service.

6. Superintendent of health devotes part time to practice of medicine. Too much of his time taken up with detailed work and not enough devoted to planning and supervising of public health program.

7. Too much stress on placarding and quarantine and too little upon education of attendants of cases of communicable diseases in scientific methods of preventing spread. Appropriations by county commissioners in rural areas been niggardly when compared with expenditures for other projects.

On the other hand the survey praised: The city hospitals, citing three as being adequate and possessing facilities of high order. 2: People above average in intelligence and civic pride. 3: Low per cent of illiteracy, only 1.4 per cent. Rural homes above average, also.

The Lancaster County Medical Society has filed with the city and county clerks a proposed plan for setting up a city-county health department in accordance with the above recommendations.

COMMENTS ON THE NEW KANSAS REGISTRATION LAW

Kansas recently acquired an annual registration law. Since many Nebraska doctors are registered in Kansas, some information on this new law may be of advantage to them.

We are re-publishing some comments on the law appearing in the *Kansas State Medical Journal:*

> "In accordance with the provisions of House Bill No. 431, enacted by the 1933 legislature, all physicians who have been licensed by the Board of Medical Registration and Examination are required to register annually if they wish to continue the practice of medicine in the State of Kansas. Registration must be made between July 1 and October 1. In the event registration is not made by October 1, the secretary is required to strike the name of the holder of the certificate from the register. However, the certificate may be renewed by payment of a fee of five dollars.
>
> "Forms have been prepared by the board and will be mailed in the near future to each physician licensed, and to the address which is recorded in the office of the secretary. In case the forms are not received by August 1, notification should be made by the physician to the secretary, Dr. C. H. Ewing, Larned.
>
> "The enactment of an annual registration law is of distinct advantage not only to the physicians but to the public as well. It is believed a number of physicians are located and practicing in the state who have never been licensed. As a matter of fact, but a short time ago, one physician was discovered who, although not licensed, had practiced in the state for approximately ten months in two different locations and had gained admission to the local county medical society.
>
> "Through annual registration it will be possible to determine who is actually licensed to practice in the state. The medical practice act makes no provision for exemption of non-licensed practitioners, except those physicians who may be called in consultation. A heavy penalty is provided for those who violate the medical practice act.
>
> "In addition to providing additional funds for enforcem nt of the medical practice act, funds will be available for publishing a directory of licensed physicians. Each physician should be provided with a copy, as well as the county attorneys of the many counties. If a physician locates in a community, reference to the directory will determine if he is licensed; if not, prompt notification should be made to the secretary of the board.
>
> "Physicians should give their hearty cooperation to the officers and members of the Board of Medical Registration and Examination in complying with the provisions of the annual registration law."

THE PHYSICIAN AS FATHER-CONFESSOR

There is an almost sacred relationship between patient and physician akin to the relationship of communicant to the clergy. The law and the decisions of the courts uphold the principle of the sacredness of privileged communications between patient and physician.

The physician is the good genius at birth, ministers to the sufferings during life and tenderly cares for the dying. His relation to the family is closer than any other, barring blood relationship.

It was therefore fitting that less than a generation ago, the physician should have been called upon to draw up the wills of persons about to depart for the great unknown. It is not to be wondered at that he should be consulted on matters of policy, political and economic. Wife or husband may consult him about intimate domestic difficulties, real or imaginary. The erring swain and the unfortunate girl who loved and trusted "not wisely but too well" go to him for help out of their difficulties. It is in these situations that the physician can show his generalship, his moral stamina and his sense of justice.

A young man approaches the doctor for something to help his trusting girl lover out of trouble. The physician at once knows what he means. If the physician is true to his profession as nearly all are, he will quietly talk the matter over with the young man or young woman and suggest that a marriage be arranged as that would make it as nearly right as it can be made. In most cases the advice will be followed, shortly. Instances like the following are common enough:

A young man came with the story that he and a young woman whom he expected to marry were in trouble, but they were not in a financial position to get married, although they had expected to get married when he could afford it. He seemed a sensible, quiet young man of honest intentions. Talking the matter over from several angles. I finally advised him to go to the young woman's father and lay the case before him, telling him he was willing to do the right thing, but he had no immediate prospects of being able to support a family. He took my advice, "laid his cards on the table", the marriage took place and the father-in-law helped them to farming equipment and they got along very nicely.

A girl of German parentage, somewhat loud and somewhat spoiled by her six brothers, a girl whom I knew very well and whose family was close to me professionally, came with a story of having missed several periods. Questioned, she admitted that a lover had taken advantage of her, but stressed the story that she had been forced. I told her that was an unlikely story and that she could have protected herself to which she plead that she fought until overcome, which I also told her was unlikely.

I suggested that abortion was impossible to consider, that she must have the young man marry her, that she needed a husband and her prospective child a father. She blurted out that she did not want him, did not care for him, would not marry him. I again insisted that the child needed a father and she a husband, that she was in no position to choose—an attitude she apparently assumed. I offered to talk to the young man if she wished me to do so. This she declined, but she promised me she would see him and report to me later. She returned with the report that the young man had said he would marry her if she would talk to her father and make him "come down right handsomely." To this astounding proposition she told me she told him to "Go to h-ll," she would not do anything of the kind. They got married and the father-in-law set them up on a farm.

A young woman came to me to find out whether she was pregnant. Examination developed a pregnancy of probably five months. She said a marriage had been planned but postponed on account of financial conditions. Feeling a fatherly interest I ventured to suggest that the wedding take place very shortly and quietly, and without waiting for a special trousseau, and suggested that by the time the baby came the community would not anymore think much about it. A full month later there was a Lutheran church wedding!

A fond mother brought her beautiful daughter to consult me because of missed catamenia. Placing her on the examining table a prominence of the abdomen was at once noticeable. I then asked her if she had been true to herself to which she replied in the affirmative. I then more insistently asked her whether her lover had taken advantage of her, which she denied with an insulted air. I then said we must make an internal examination to find whether she had a tumor. To this she demurred. Her mother came to my assistance by asking the girl some pointed questions. Finally the girl, crying, said, "Let's go home." A wedding followed.

A girl from a neighboring community worked in a cafe and came under my care on account of painful flooding. Questioned, she readily admitted indiscretions with a lover who had departed. I had her moved to the home of her parents, who were unsuspecting Germans, told them she had had an internal hemorrhage and needed surgical attention, and with the assistance of another physician, who administered an anaesthetic, cleaned out the debris with a dull curette—and all was well.

A friend of my family, a teacher, came to me with the story of indiscretions with her lover in a moment of forgetfulness, for which she blamed herself more than she did the lover, and wondered whether she might be pregnant. She thought there had been no penetration. I encouraged her to think nothing awful had happened—and events proved my statement correct. They later married and raised a family of fine boys.

Another teacher came to me from a near-by community with the story that she had been taken advantage of by undue force. Examination revealed nothing except that she had a double vagina, with a dense, tough septum.

A mother of four children, who had obtained a divorce from her spouse some years before, because he had brought a neisserian infection home as a result of which she had to have a serious operation, and on account of other cruelties and who, one might think was above suspicion, called me to her well kept home saying she had periodical pains and was flowing. Examination convinced me of the presence of an incomplete miscarriage. I asked her if there had been a man in the case to which she assented. I moved her to the hospital and gave out the statement that she had suffered an internal hemorrhage. She made a good recovery and before leaving the hospital paid all her bills and left tips for both nurse and doctor in appreciation.

A widow, a devout Catholic, came to me much perturbed with the following story: It was summertime. Her bedroom was down stairs. Late Fourth of July evening a younger relative of her late husband, slightly under the influence of liquor, came to her window. She let him in the house and he sat down on the edge of the bed, then, presently, attacked her. She felt sure intromission had not occurred, but she felt that her person got soiled, and she wondered about the probabilities and the possibilities. I tried to reassure her with indifferent success, until time proved her untainted.

Perhaps the poorest couple it was ever my pioneer privilege to know was Jimmy L. and his wife, young people barely of age, renters, who occasionally came to town on their rickety lumber wagon pulled by two skinny horses. Jimmy and his wife did not live altogether agreeably it appears, for one day he came into my office and asked me whether I could give him some "love powders" for his wife. He explained that she did not seem to care for him anymore and he had heard there was such a thing as love powders to be had. I had to explain to him that there was no such medicine and ventured the suggestion that perhaps if he made quite an effort to be agreeable it might affect the home life of both.

Kyriss was a German bachelor who lived on his own farm and wanted a wife. He was stolid, about forty and unsophisticated. He was told he might be able to induce a certain young woman whom we will call Henrietta to marry him. He called on her several times but she repelled him for he was too slow to suit her disposition. Henrietta had other admirers more to her fancy. In the course of time Henrietta discovered herself with prospects of motherhood and without anyone willing to assume paternal responsibility. A family council was held and it occurred to some one in the council that simple minded Kyriss might be won over. Father interviewed Kyriss with the story that Henrietta wanted to see him; that she was very sorry for having repelled his previous advances—would he come over to their home? Kyriss would. A prompt wedding was arranged.

In ten weeks I was called to a confinement. A normal child of eight pounds was born. "A seven month's child" the grandmother exclaimed—"Don't you see the blueness of the finger nails?" I did not. A neighbor lady came in and ventured the suggestion that seven month children never lived more than a few weeks. This disturbed Kyriss and he promptly came to see me about the matter. I told him not to worry that the child was fully developed and quite all right. I had not gotten wise to his stupidity, nor her duplicity. At this he said if it was a full term child, it wasn't his; that it couldn't be more than a three month child, if it was his. At this I sensed the situation and changed my story, telling him he must not for a minute let such thoughts trouble him, that it was a fine child and no matter whether it was seven months or three months. it was physically perfect and he must not allow himself to think of anything except that it was his child. This seemed to satisfy his mind and the matter quieted down.

This may not pass as high class literature but it is a true representation of one phase of life seen by all physicians. during the passing years. It should prove a worthwhile object lesson to the young physician just beginning practice. The physician's opportunity to do good social service in such cases is undeniably great and he should consider it a duty as well as a privilege to use his influence for the good of such misguided and unfortunate persons.

OUTSTANDING PIONEER OBSTETRICAL EXPERIENCES

In recalling my early experiences in obstetrics one case in particular stands out in memory as nearly two hours of anxiety and alarm. At that time I had but three years' experience as a country doctor.

I was called to go several miles in the country to attend a confinement. I found the expectant mother having strong, frequent labor pains. Palpation of the abdomen indicated that the head of the foetus was in the upper part of the uterus, indicating that it was a breech presentation. Venturing to make a vaginal examination, I discovered the vagina tightly packed with a sack which was pressing against the perineum; nothing else could be found. The sack did not expand during a pain or relax as the pain subsided. This soon convinced me that it was not a normal bag of waters—but what was it? I admitted to myself that I did not know.

I did not think it advisable to make an attempt to rupture the sack as I did not know what it was or what it contained. To call for assistance was out of the question as no other physician was within twenty miles. Fortunately nature was coming to my relief, but I did not realize it.

Labor pains were becoming what seemed to me to be furious. The sack was protruding more and more until a stronger and more prolonged pain thrust the sack through the vulva, followed by the buttock, the delivery was soon completed.

A glance at the foetus and all was clear. A spina bifida sac, the first I had ever seen, and nearly the size of the babe's head, was attached by a broad pedicle to the lumbar spine just above the sacram. There was no pulsation of the cord, no heart beats could be detected, no respiration. Mother expressed herself as greatly relieved. It was needless to state that the young doctor was mentally very much relieved.

In looking at my watch I discovered that I had been there less than two hours. To me it seemed much longer.

The mother's recovery was without incident.

—Edward Tanner, Battle Creek.

ALBERT F. TYLER, PRESIDENT, AMERICAN CONGRESS OF PHYSICAL THERAPY

During the opening session of the American Congress of Physical Therapy to be held at the Palmer House, Chicago, September 11-16, Dr. A. F. Tyler, well known Omaha radiologist, will be inducted into the presidency of the organization. At last year's meeting of the organization Doctor Tyler was awarded the distinguished service medal for outstanding accomplishments in the field of radiology and was elected president-elect.

ALBERT F. TYLER

Doctor Tyler first became interested in x-ray work when a student, under Dr. J. P. Lord as preceptor, beginning in 1905; he was one of the first to recognize the constitutional effects of over x-ray dosage to the operator; was the first to call attention to the production of fibrosis in the lungs in patients treated with x-ray for malignant conditions in the breast or chest wall; was the first in Omaha to use the high frequency current for extensive surgical removal of malignant growths.

He has been a voluminous writer on subjects connected with his special line.

Albert F. Tyler was born in Logan county, Illinois, March 14, 1881; graduated from Nebraska Wesleyan University with a bachelor of science degree and from Creighton University College of Medicine in 1907. Dr. and Mrs. Tyler have a son and daughter.

EDITORIAL PARAGRAPHS

It is stated that a serum for the treatment of undulant fever has been developed at Cincinnati.

Ewens of Atlantic City advocates removal of the uvula as a preventive for repeated colds and claims to have a record of some 1200 cases to prove his contention.

It is stated that in New York state in 1930 there was one malpractice suit for every twenty-two physicians. This shows the possibilities and the dangers confronting the medical profession.

A new source of artificial ultraviolet rays may make it possible to take some classes of photographs without the aid of visible light, according to R. L. Zahour of the Westinghouse Lamp Company, Bloomfield, N. J.

The death of Dr. A. Hugh Hipple, dean of the Creighton University School of Dentistry, by drowning in the St. Lawrence river while fishing, will be regretted by his many friends in the medical profession. Dr. Hipple had appeared on many medical society programs in this state.

The alarming prevalence of venereal diseases can be grasped from a statement emanating from St. Louis, which says that the care and treatment of venereal diseases in public institutions, in private institutions, by private physicians, and the examination of prostitutes in that city costs over $207,000,000 annually. St. Louis is but an example of metropolitan centers.

We have several new ads this month. The Inter-State Postgraduate Medical Association has a half-page ad; The Doubleday-Doran Co. is advertising Dr. Palmer Findley's new book, "The Story of Childbirth"; and Eli Lilly & Co. again has a two-page colored ad. Business is picking up, thank you! Read the ads and patronize the advertisers who make this *Journal* possible.

The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the Public Auditorium, Cleveland, Ohio, October 16-20, 1933. Many distinguished teachers and clinicians will appear on the program. The major list of the names of the contributors to the program, with other information, appears on page two of this *Journal*. All members of the Nebraska State Medical Association are cordially invited to attend. Registration fee of $5.00 admits all members of the profession in good standing.

Immediately after the annual meeting typewritten copies of the discussions as taken by the stenographer are sent to all discussants for correction with requests that they be returned to the editor promptly. Up to date about one-half of the discussions of the last annual meeting are still out, presumably on the desks or files of the doctors. The original papers cannot be published until the corrected discussions thereto are received at this office, and it is very unfair to the authors of the respective papers to have them held up. Kindly look over your desk or file and if you find such papers send them to this office.

The *Pennsylvania Medical Journal* comments on the fact that "in France, Italy and Germany a large number of physicians are found in the legislature and in many administrative positions. Some of the leading statesmen and politicians of the continent have had medical educations or have achieved signal distinction as medical teachers or practitioners. In this respect the profession in England is less prominent than that of the continent, but even in England the role played by the medical profession in the control of affairs is greater than in this country. One would think that a republic would be a place where all occupations would be represented in government; and yet it is a singular fact that almost the sole avenue to political preferment is through the legal profession. Nearly nine-tenths of our legislators and a large proportion of those who hold executive positions are drawn from the law."

A policy of grasping greediness seems to have developed in some of the hospitals conducted under religious auspices. It has not been uncommon in recent years on entering a hospital for care, for the patient or his next friend to be gruffly asked, "How are you going to pay for this?" or "At what bank do you do business?" or similar questions, forgetting, apparently, that hospitals founded by religious bodies are supposed to exist for what good they can do to the sick. It is, therefore, somewhat encouraging to read a resolution passed by the Catholic Hospital Association recently: *Be It Further Resolved,* That in the Spirit of Charity, flowing from the loving Heart of Christ and taught by Him in word and example, this Association cannot and does not regard the indigent as the ward solely of the state and that it record its unwillingness to resign the valued privilege of caring for Christ's poor upon which privilege have been based some of the most outstanding achievements of our civilization, into the hands solely of governmental agencies.

NECROLOGY

Francis H. Geer, Claremont, Calif.; retired, Medical College of Ohio, Cincinnati, 1877; practitioner at Leigh and Humphrey during the late eighties and early nineties; at Columbus in association with Drs. Martyn and Evans from 1893 to 1904, after which he moved to Claremont, Calif.; an ardent lover of music and an accomplished singer; active in community affairs in his earlier years; formerly a member, Nebraska State Medical Association; died July 20, aged eighty-four years. One son survives.

Francis A. Bryant, Herrick, S. D.; College of Physicians and Surgeons, Keokuk, 1876; practitioner at Herrick for more than twenty years; theretofore in practice at Norfolk, Nebr., for a number of years in the nineties and later; author of several novels, among them "The Story of Two Lives"; former member, Nebraska State Medical Association; died August 14, 1933, aged about eighty-one years.

Frederick W. Kruse, Weeping Water, Nebr.; native of Germany; University of Nebraska, College of Medicine, 1902; University of Kiel and Halle, 1893; practitioner, successively at Millard, Sutherland, (10 years), Avoca (5 years), Weeping Water, (17 years); member, Nebraska State Medical Association; died August 6, 1933, aged seventy years.

Daniel W. Thompson, Council Bluffs, Iowa; native of Mead, Nebr.; Nebraska College of Medicine, Lincoln, 1899; former practitioner at Lincoln; specialist in diseases of the Eye, Ear, Nose and Throat; died from an attack of pneumonia, August 6, 1933, aged about fifty years.

William J. Galbraith, Inglewood, Calif.; New York University College of Medicine, 1880; co-founder with the late Count Creighton of Creighton Medical College, Omaha; professor of surgery and clinical surgery, Creighton Medical College, for a number of years; chief surgeon of the Union Pacific railroad for a number of years; resident of Omaha for twenty years previous to 1901; sometime president of the national association of Railway Surgeons; sometime surgeon at the copper industry at Cananea, Mexico; also practiced in Honolulu; Burbank and Los Angeles, Calif.; former member, Nebraska State Medical Society; died about the middle of July following several attacks of apoplexy, aged about seventy-four years. A widow and two sons survive.

Raymond Rice, Omaha; Creighton Medical College, 1909; member, Nebraska State Medical Association; died July 15, 1933, aged forty-five years. A widow survives.

Thomas M. Gairdner, Waco, Nebr.; (retired), McGill University, Montreal, 1886; pioneer physician at Waco where he served the community for forty years; former member, Nebraska State Medical Association; died at the home of his son at Gibbstown, N. J., July 27, 1933, aged seventy-three years. A widow, two sons and a daughter survive.

Elmer E. McClelland, Sr., Los Angeles, Calif., Drake University College of Medicine, 1887; also a pharmacist; in practice successively at Culbertson, Nebr., La Crosse, Wis., Whitman, and Antioch, Nebr.; retiring from active practice he conducted a drug store at Alliance for some time until the first of the present year, when removed to Los Angeles; died July 24, 1933, of cerebral hemorrhage, aged about seventy-two years. A widow, several daughters and a son, Dr. E. E. McClelland, Jr., Elgin, Nebr., survive.

MEDICAL RESERVE OFFICERS INACTIVE DUTY TRAINING

The medico-military course of inactive duty training for Medical Department Reserve officers, which has been held at the Mayo Clinic during the past four years, will again be held this year from October 1st to 14th, both dates, inclusive. This inactive duty training will follow the plan so well worked out under the auspices of Colonel George A. Skinner and the military features will be under his personal supervision.

This type of military medical training is now well established and has proved its worth during the past four years. The course offers valuable and interesting training for the Medical Department officers of all the components of our national defense. The staff and faculty of the Mayo Clinic have again placed their unexcelled facilities at the service of their government in the interest of preparedness, and have extended an invitation to all the services to participate.

This short course is equally applicable to general practitioners and specialists. The morning hours are devoted to purely professional subjects selected by the student officers. The afternoon hours pertain solely to medico-military subjects and the evening hours are covered in a lyceum course of general interest.

Application for this course of inactive duty training should be made to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska. Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the government; and that one hundred hours' credit will be given those who take and complete the course. While it is desireable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

THE SOCIETIES

The **Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society** held a meeting at the new Indian hospital building at Winnebago, August 4th. About twenty-five physicians attended and in addition there were many ladies present.

The program:

"Our University Hospital", Dr. F. J. Bean, Omaha.

"The Thyroid Gland" (lantern lecture), Dr. Alfred Brown, Omaha.

"Diagnosis of Brain Tumor" (presentation of case), Dr. J. J. Keegan, Omaha.

Dr. Bean outlined the status of the University hospital as a teaching hospital, told of the allocation of beds to the various specialties and to the counties of the state, and of the great demand on its resources in this period of depression.

Dr. Brown gave an illustrated lecture on the various thyroid gland pathologies; many thought the cleanest cut descriptions of thyroid disease ever heard.

Dr. Keegan gave some very fine diagnostic points in the early diagnosis of brain tumor, one of the most important of which is failing eyesight in the presence of persistent headache and vomiting. The ophthalmoscope should give the general man some help in the early diagnosis of brain tumor.

A six o'clock dinner was served to the doctors and their ladies at the hotel at Walthill.

The meeting of the **Custer County Medical Society** was held in Callaway's beautiful city park on Tuesday, August 8. A lovely picnic dinner which the men's wives also attended was greatly enjoyed at the noon hour and was followed by a scientific meeting in the afternoon. Out of the county guests were Dr. Floyd Clarke of Omaha; Dr. K. S. J. Hohlen of Lincoln, Dr. C. A. Selby and Dr. and Mrs. Walker of North Platte. Dr. Clarke, who is a child specialist in Omaha, spoke on "Pneumonia in Children"; Dr. Hohlen, who is a brain specialist at Lincoln read a paper on "The End Results of Brain Injuries" and Dr. Selby gave a speech on "Medical Economics."

HUMAN INTEREST TALES

Dr. A. F. Keiser has located at North Bend.

Dr. J. H. Vance, Omaha, was reported ill last month.

Dr. A. T. Robertson has moved from Madrid to Ogalalla.

Dr. R. E. Bray, Martinsburg, spent his vacation in Colorado.

Dr. Harlan Heim has moved from Beverly, Ky., to Humboldt.

Dr. A. J. Cameron, Herman, fished in Minnesota lakes in July.

Dr. Eugene Simmons, Omaha, recently submitted to an appendectomy.

Dr. A. C. Blattspieler and two sons, Central City, fished in Canadian lakes in July.

Dr. and Mrs. M. E. Lathrop, Wahoo, visited Colorado points last month.

Dr. J. V. Beghtol, Hastings, spent several weeks in the Colorado mountains.

Dr. Ruth Warner spent a month in postgraduate study in New York City.

Dr. R. F. Jester and family, Kearney, spent their vacation at Lake Okoboji.

Dr. H. J. Lehnhoff has become chief of staff of St. Elizabeth's hospital, Lincoln.

Dr. Roy Cram, Burwell, and a party fished in the Minnesota lakes in late July.

Dr. and Mrs. F. X. Rudluff, Battle Creek, visited the Minnesota lakes in August.

Dr. George W. Covey and family, Lincoln, fished in northern Minnesota lakes in July.

Dr. and Mrs. William Gray, Broadwater, spent some time at Estes Park, Colorado.

Dr. and Mrs. Roy Whitham, Lincoln, spent several weeks on a trip to the Pacific Coast.

Dr. and Mrs. O. R. Ivans, Crawford, attended Frontier Days celebration at Cheyenne.

Dr. C. P. Fordyce and family, Westfield, N. J., visited in Falls City and Lincoln in August.

Dr. W. J. McMartin, son of Dr. and Mrs. Charles McMartin, Omaha, has located in Omaha.

Dr. C. R. Spradling, Hallam, suffered a fractured pelvis in an auto collision early in August.

Dr. and Mrs. Wade Preece, Waterloo, Iowa, visited the doctor's parents at Battle Creek, in July.

Dr. M. F. Mudge and family, Middleport, N. Y., visited friends in Lincoln, a short time ago.

Dr. F. G. Vosika, Clarkson, suffered slight injuries in an auto spill near Seward the last of July.

Dr. and Mrs. J. S. Devries, Fremont, recently motored through parts of Wyoming and Colorado.

Dr. Margaret Hammond, Lincoln, spent some time at Colorado Springs and other Colorado points.

Dr. and Mrs. C. F. Clark, Omaha, visited Denver, Estes Park and other Colorado points recently.

Dr. R. H. Burrell, Creighton, attended the railroad surgeons convention in Chicago in mid-August.

Dr. and Mrs. E. R. Porter, Omaha, spent a month in Alaska, Vancouver and points in Washington.

Dr. and Mrs. C. S. Hubbard, Mason City, visited at Las Animas, and other Colorado points recently.

Dr. A. F. Tyler, Omaha, spent the latter part of August in the pine woods of northern Wisconsin.

Dr. R. E. Roche, Sidney, spent some time visiting clinics at Rochester, Minn., and Chicago, in August.

Dr. W. P. Haney, Omaha, is reported ill with a heart affection that has confined him to a hospital.

Dr. A. R. Bryant has become associated with Dr. R. W. Taylor, Beatrice, in eye, ear, nose and throat work.

Dr. John C. Thompson and family, Lincoln, motored to Yellowstone Park and Colorado points late in July.

Dr. Claude Laird, Hastings State Hospital, and family spent some time in Yellowstone Park early in August.

Dr. and Mrs. Paul Shaughnessy, Cleveland, spent a short time visiting relatives at St. Paul, Nebr., in August.

Dr. A. O. Skinner and family, Beatrice, Institution for the Feeble Minded, visited the Ozarks early in August.

Dr. F. L. Wilson and family, Stuart, motored to Montana on a combined business and pleasure trip, recently.

Dr. and Mrs. G. W. Ira, Lynch, visited their daughter at St. Paul, and fished in the Minnesota lakes recently.

Dr. R. C. Richards, Newcastle, accompanied a friend on a motor trip through the Dakotas, Montana and Wyoming.

Dr. and Mrs. D. T. Quigley, Omaha, attended the graduation from Harvard Medical School of their son, Bartlett Quigley.

Dr. R. B. Adams, Lincoln, secretary-treasurer of the Nebraska State Medical Association, underwent an operation recently.

Dr. and Mrs. Herbert Gerald, Omaha, visited Dr. and Mrs. A. O. Peterson at their summer home in the Black Hills, in August.

A bag of surgical instruments belonging to Dr. E. M. Walsh, Omaha, was stolen from his car parked in front of his residence.

Dr. C. D. Hustead and family, Falls City, spent some time in August along the international boundary in Minnesota and Canada.

Dr. C. D. Evans, Jr., Columbus, has been appointed district deputy grand exalted ruler of the Elks for the eastern district of Nebraska.

Dr. John Ashby and two children, Evanston, Ill., visited the Dr. A. A. Ashby family at Fairmont and other relatives in Nebraska in July.

Dr. and Mrs. Bruce Henrickson visited their parents in Omaha last month. The doctor will establish a practice at Long Branch, N. J.

Dr. Z. L. Kay, McCook, oldest practicing physician in southwest Nebraska recently celebrated his eighty-fourth birthday. He has been in practice sixty years.

Nearly every physician in the state has been to the Century of Progress Exposition, or is going; so do not get peeved if your name does not appear in this connection in this column.

Dr. N. H. Rasmussen of Scottsbluff, and a party of friends including Lawrence Enzminger of Omaha, as pilot, took an airplane trip to Minnesota where they enjoyed some good fishing during July.

Dr. W. F. Milroy, Omaha, was honored by the Royal Arcanum, at a testimonial dinner celebrating his forty years of service as medical examiner for that order. Dr. and Mrs. Milroy are about to move to Los Angeles.

A group of Omaha women physicians was entertained by the Lincoln women physicians over the week-end of July 22-23. A picnic supper at the Axis club house, a tour through the Capitol and a dinner in the Capitol cafe were features of the event.

Dr. E. W. Fetter, North Platte, was called to a certain place in the night, recently, held up, taken for a ride, robbed, bound hand and foot, thrown out of car, car stolen. The car was recovered at Concordia, Kans., when officers attempting to arrest the robbers, shot and killed one.

The many friends of Dr. D. C. Bryant, for years dean of the Creighton Medical School, and for many years one of the foremost eye specialists in Omaha, will be sorry to learn that he has sustained a fracture of the hip. His present home is Claremont, Calif. He is reported convalescing nicely.

Dr. William Rathman, Blair product, who for the past year has been stationed at the United States Marine hospital in Chicago, has been transferred to the new government hospital at Seattle, Washington. Enroute to his new post, Dr. Rathman and his wife stopped off in Blair before leaving for the west coast. He has contracted to remain there for a year. The Seattle hospital is one of the largest and finest on the coast and his appointment there is a distinct honor, there having been scores of applicants for the vacancy.

BOOKS RECEIVED

THE STORY OF CHILDBIRTH, by Dr. Palmer Findley, with many illustrations. Octavo, blue cloth, gold lettering, 376 pages, Doubleday, Doran and Co., Garden City, New York. Price $3.00.

See editorial page 353.

PSYCHIC FACTOR IN CARDIAC DISORDERS

Lewis A. Conner, New York (*Journal A. M. A.*, Feb. 15, 1930), states that there are several impelling reasons for the selection of this topic for his contribution to this series of talks on subjects of special interest to the practitioner. These may be stated briefly as: first, the great prevalence of disorders of the heart having as their chief or only determining cause some purely emotional disturbance; second, the frequency with which such psychic disturbances are the result of some injudicious statement or action on the part of a physician—be he family practitioner, specialist or life insurance examiner; third, the fact that emotional reactions may play a very important part in the clinical picture presented by patients who have unmistakable evidences of organic heart disease, and finally, the necessity, on the part of the practitioner, of a full and sympathetic understanding of these psychic factors if treatment is to be successful. The author believes that it is in connection with the treatment of the psychic aspects of cardiac disorders that one feels most keenly one's deficiencies in psychiatric training. Then it is that one must bring to bear on the problem all that has been gathered of experience and sympathetic insight into the obscure and tangled processes of the human mind. At times it is much easier to recognize the importance of these psychic factors than to know how best to deal with them. In many instances the problem is simple and a tactful explanation of the situation and reassurance may be all that is needed. At other times the therapeutic problem is difficult and complicated and clearly calls for the assistance of a trained and experienced phychiatrist. Generally, however, it falls to the lot of the family physician to deal with such patients, and if he has had the insight to recognize the significance of the emotional factor he will usually be found to possess the judgment and good sense necessary to effect the cure. Tact and common sense will go far toward compensating for the lack of psychiatric technic. A word should be said first concerning prophylaxis. Obviously the fundamental difficulty in a patient with a cardiac neurosis lies in his personality and his mental composition, and those ingrained characteristics one can hardly hope to alter materially. But this fact makes it all the more important that as physicians we exercise great care to avoid supplying such an unstable individual with any suggestion that may serve to crystallize his fluid anxieties and center them on his heart. If in the course of health or insurance examinations some unimportant cardiac anomaly is noted by the examiner, it is often wise to avoid mention of it; or, if it seems necessary to apprise the patient of it, the matter should be presented to him in such a way that it will carry with it reassurance and will put his mind at rest concerning its significance. Often it is necessary also to caution the anxious parents of children with the milder forms of heart disease concerning the harmful effects of too constant reminders to the child that his heart is crippled and that he is not like other children. Such an attitude may well lead to psychic scars more serious and disabling than those of the heart valves. With regard to treatment, usually the first problem to be faced is that of acquainting the patient with the fact that his symptoms are due to emotional causes rather than to disease of the heart itself. One might expect that such knowledge would come to him as a great relief, and frequently this is the case. But by many patients the intimation that the heart is normal and that the symptoms have a psychic origin is interpreted as meaning that the symptoms are "imaginary," and the first reaction to such a disclosure is apt to be one of strong resentment. Such a reaction must be prevented at any cost, for, if it occurs, one's usefulness with that patient is ended. In no other condition perhaps is complete faith in the judgment and wisdom of the physician so essential to success in treatment. The patient's understanding of the true character of his complaint must not be gained at the expense of his self-respect. If the necessary time and trouble are taken, it is usually not difficult to convince the patient that one realizes that his pain, palpitation and dyspnea are no less real and disturbing because they are brought about by agencies outside the heart itself, the really important difference being only that in his case the symptoms are curable whereas if they were the result of organic heart disease they might not be. Such a discussion should of course be preceded by a thorough and complete physical examination. Often it is wise to supplement this by instrumental examinations as well in order that, when the statement is made that the heart is not diseased, it may be backed up by as powerful an array of facts as possible. The casual announcement after a hasty and superficial examination that "there is nothing the matter with the heart'' will almost certainly fail to carry conviction. If the patient can be persuaded to accept without resentment the idea that his symptoms are of "nervous" origin, the battle is half won. From that point on the treatment consists chiefly in the liberal application of the two most generally effective remedies in the physician's armamentarium—reassurance and encouragement. Chiefly on their skilful use will depend the promptness and completeness of the recovery. But the reassurance must not be simply that of the spoken word. The patient must be shown how to reassure himself by a demonstration that his cardiac symptoms are made better rather than worse by the exercise and effort which hitherto he may have feared to undertake. To assure a patient that his heart is normal and at the same time to impose various restrictions as to its use is a contradiction which he will be the first to recognize. Exercise of some form is usually an essential part of treatment. It serves the double purpose of demonstrating to the patient that his part is capable of much more than he supposed and of rendering the heart less irritable and less ready to respond to the psychic stimuli. The form of exercise to be selected will depend on the special requirements and circumstances of the individual patient. In one case it may be some outdoor sport, such as golf or even tennis, which combines recreation with muscular development. In another it may be graded room-exercises or gymnasium work under the supervision of a trainer. Whatever the type of exercise selected, it must be carried out regularly and persistently and must, of course, be graduated carefully to suit the capacity of the patient. Drugs should be avoided unless there is a clear and imperative reason for their administration. The encouraging effect on the patient of being told that he does not need medicine usually far outweighs any transient benefit that may be gained from its use. If at the outset it seems important to utilize the sedative action of such drugs as phenobarbital and the bromides, these should be discontinued just as soon as the urgent need for them has passed. As for drugs such as digitalis and quinidine which are known to be used for their effects on the heart, they can do nothing but harm. No intelligent patient can possibly be persuaded that his heart is sound when at the same time he is asked to take digitalis. In deciding on the advisability of such measures as rest in bed, baths and massage, the guiding principle should be the probable effect of such procedures on the mind of the patient. The chief objection to them is that they so often serve as a constant reminder to him that he is not well, and this mental effect may nullify any physical benefit that might otherwise be derived from them. Much the same may be said concerning the interdiction of tobacco and coffee. Whenever it is known that the use of either of these substances is excessive and is contributing to the neurotic symptoms, they should of course be forbidden; but when there is no reason to think that the smoking or the coffee drinking plays any part in the production of the symptoms it is usually wise to permit the continuance of the habit so long as it can be kept within bounds. Every liberty of this sort that can safely be given will have the effect on the patient of encouraging him and of persuading him that he cannot be seriously ill. From what has been said concerning treatment it must be apparent that the management of patients with cardiac neuroses belongs essentially to the realm of psychotherapy. The details of such treatment will, of course, vary with the character of the individual patient and with the predilections of the physician. If the latter will but keep in mind the psychic basis of the neurotic symptoms and the need of treating the mind of his patient rather than the symptoms themselves, and if he can call to his aid a modicum of tact, common sense and optimism, he is likely to be rewarded by results quite as brilliant and as satisfying as are ever obtained in any field of internal medicine.

CONTRACT PRACTICE

R. G. Leland, Chicago (*Journal A. M. A.*, March 5, 1932), believes that although there are many details of contract practice which deserve much more detailed description and comment than is possible in his report, it may be stated that contract practice (1) took its origin largely from necessity; (2) has been legalized, in certain places, by state statue; (3) under certain conditions and in some forms is both ethical and legitimate; (4) in general, has become highly commercialized and competitive; (5) is largely limited to the pay roll class; (6) does not, in most cases, extend its provisions to women and children; (7) concerns itself, almost without exception, to curative medicine and does not include preventive measures; (8) shows no interest in public or individual welfare; (9) furnishes medical care which is often inferior in character; (10) in many instances is characterized by underbidding, subletting, misrepresentation and racketeering; (11) is economically unsound in many of its present forms; (12) is essentially sickness insurance usually not supervised or regulated; (13) is often used by the operators thereof to influence legislation in favor of extension of the plan; (14) in many of its present forms lowers the confidences of both the individual and the public in the medical profession; (15) has some features that deserve refinement and extension and others that are unethical and dangerous and should be abolished.

SPINAL ANESTHESIA

F. G. Lindemulder, Ann Arbor, Mich. (*Journal A. M. A.*, July 16, 1932), describes the clinical changes that occur during and following spinal anesthesia and some of the sequelae and complications. He also reports two cases in which death occurred several days following the anesthesia. It appeared that the anesthesia was a contributing cause for the deaths. The permanent effects of the drug were seen at necropsy. In one case, the spinal cord was noted to be normal in the cervical region, and in the lower dorsal and lumbar regions definite pathologic changes were noted. It has been said by several observers that there is no irritation in the nervous system following the injection of procaine or its allied drugs and they compare this finding with irritation produced by the inhalation method on the mucous membranes of the bronchi and lungs. However, the author feels that there is a definite toxic effect on the spinal cord and the spinal nerve roots, which shows its effect both clinically and pathologically, the patients usually complaining of pain, and this finding can be explained by the pathologic study of the nerve roots.

FEW "ACES" AMONG MEN OF MEDICINE

I hold no brief for doctors; I believe that I can look at them rather calmly. And I can say this: that on the whole they are an honest, competent and resourceful set of men at their trades, and that most of the difficulty comes from expecting too much of them.

It is preposterous to think that 150.000 men, more or less, selected at random should be scientists and artists. They are not. The average doctor is a trailer, a camp follower, a nonentity, who contributes nothing to medical science but merely tries, according to his lights and opportunities, to apply what other men have found out.

This latter work is done by a numerically negligible percentage of the profession; indeed many of them are not even in the profession. Pasteur was not a doctor at all. Is the average telephone lineman a Steinmetz, or the average power house attendant an Edison?

The outlook of the average ordinary doctor is no more akin to that of Dr. William Welch or William Osler or William Halsted—scientifically, ethically, spiritually—than the physical outlook of a lowly catfish paddling around in a mudhole is akin to that of a bald eagle soaring in the empyrean. Personally, I'm one of the catfish, and I can testify that the hole is crowded.—An Anonymous Physician in the Forum and Century.

SOME UNTOWARD EFFECTS OF ACETYLSALICYLIC ACID

According to R. W. Lamson and Roy Thomas, Los Angeles (*Journal A. M. A.*, July 9, 1932), Drug idiosyncrasies in allergic patients are not infrequent. An abnormal response to acetylsalicylic acid is probably more common than to any other drug. Nostrums containing this compound are not "harmless" from the standpoint of the allergic individual. The authors report four cases in an effort to substantiate that point of view. One patient died within a short time after taking a small dose of this nostrum.

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THE COLOSTOMY*

Indications, Methods and Points of Practical Interest Regarding Its Care.

R. RUSSELL BEST, M. D., F. A. C. S.,
(Department of Surgery, University of Nebraska)
Omaha, Nebraska.

Although the colostomy is an operation dating back about one hundred fifty years, its introduction has always been abhorrent to the individual patient, and unfortunately will continue to be so because the abdominal anus is in full view. It is more unfortunate that the laity, and too a great many doctors, do not realize that an individual can lead a normally active life, both socially and physically, even though he has an abdominal colostomy. That this is not fully appreciated is a stumbling block to adequate surgical treatment of carcinoma of the rectum and lower sigmoid, the psychological effect of such a misapprehension dampening the enthusiasm for the early diagnosis of these malignant lesions. If one only sees the colostomy in the inoperable carcinoma cases he sees it at its worst, but even the relief that the inoperable case receives is sometimes rather startling. I have seen these patients go on for eight to ten months carrying on their normal work and I can recall no instance where a patient has been ostracized after submitting to a permanent colostomy. It is the malignant lesion itself that becomes intolerable to one's fellow men.

It is regrettable that so much pessimism confronts the profession in carcinoma of the large bowel. Needless to say there is a foundation for this attitude since the disease accounts for so many deaths each year. According to the Bureau of Census there were 115,265 deaths from carcinoma in the United States during the calendar year of 1930. As it is recognized that 14% of all carcinomas arise in the colon, rectum and anus, approximately 16,136 deaths occurred in 1930 from that cause. From available figures, I would estimate there are 400 deaths each year in Nebraska alone from carcinoma of the colon, rectum and anus.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

In private practice about 50% of the cases are found to be inoperable at examination, while in charity institutions, such as the University Hospital and the Douglas County Hospital, about 80% are found inoperable. In the latter instances I have had the privilege to examine and many times to operate these cases, thanks to my colleagues. and as I tend to rather radical surgery in such conditions, this high figure of inoperability in the charity cases is not due to surgical conservatism.

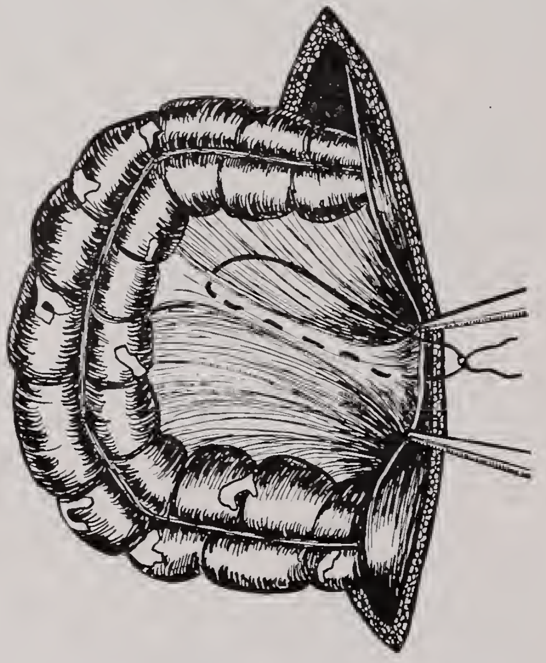

Fig. 1. Closing off the lateral space to prevent bowel obstruction. If a temporary colostomy, a glass rod is inserted under the loop of bowel and through the mesentery. All layers of abdominal wall are closed rather snugly around the two limbs but no sutures are placed directly into the bowel wall.

This paper does not purpose to discuss the diagnosis of carcinoma of the large bowel but these few latter remarks should arouse us all to further interest ourselves and to portray to the laity the necessity of an earlier presentation of the patient to the doctor. Carcinoma of the large bowel is quite a hopeful condition if diagnosed early and cures of three to ten years are not infrequent. Unfortunately the disease is so insidious that many times it develops among our own members to the inoperable stage before the slightest suspicion has been aroused.

In this presentation, I am attempting to crystallize my personal working principles regarding the indication, technic, and practical consideration in the care of the colostomy.

I prefer to divide colostomies into three types. First, the temporary colostomy, where the discharge of the fecal current through an abdominal anus is only for a short period of time, during which time medical or surgical treatment removes the underlying pathology, permitting re-establishment of bowel continuity. Second, the incidental colostomy, where some type of a Mikulicz procedure is carried out. Here with the extirpation of the diseased segment, the two limbs of bowel are left in the abdominal wound with an intervening spur. Later the spur is crushed and bowel continuity is res-established, necessitating no further continuance of the colostomy. Third, the permanent type where the bowel continuity cannot be re-established and the abdominal opening must serve as a permanent outlet. The temporary colostomies are of a loop character, while it is always preferable to have the end type in permanent colostomies.

The temporary type of colostomy or cecostomy is indicated in the following conditions:

1. As a temporary or an incidental step in resection of the large bowel for carcinoma, stricture, etc.
2. To relieve acute obstruction of the large bowel.
3. In the treatment of inflammatory lesions, i.e. diverticulitis of the large bowel.
4. As a preliminary step in complicated fistula between the colon and urinary organs.
5. As a protective valve mechanism in some wounds of the large bowel.
6. In imperforate anus.

The principle here is to deliver through the abdominal wall a loop of bowel above the lesion, usually the sigmoid or descending colon, occasionally the cecum or transverse colon. Following the removal or cure of the lesion distal to the colostomy and re-establishment of bowel continuity, the colostomy is permitted to close or is closed by operative measures.

If the condition is not acute and only a temporary procedure should be necessary for a lesion of the rectum or recto-sigmoid area, a left inguinal type of colostomy is the operation of choice. A left McBurney incision is made halfway between the umbilicus and the anterior superior iliac spine, except that the line of incision through the transversus and internal oblique muscles is in the general direction of the external oblique incision. The abdomen is explored, always beginning at the liver and coming downward toward the pelvis. approaching the supposed pathology lastly. The loop of bowel is then brought out through the incision and as in all colostomies the mesentery is sutured to the peritoneum of the lateral abdominal wall to close off this lateral space so as to prevent the possibility of intestinal obstruction. A small rent is made in the mesentery, a glass rod placed through this rent and allowed to rest upon the abdominal wall. The upper and lower ends of the oblique incision are then sutured rather closely around the bowel. No sutures are needed to fasten the bowel to the peritoneum, skin or fascia. One never regrets not inserting these sutures because the glass rod is sufficient to elevate the loop until permanent adhesions have taken place between the bowel and wound margins. Leakage does not occur because sealing off takes place within the first six hours. In lesions of the transverse colon it is occasionally necessary to use an upper right rectus or left rectus muscle splitting incision. In such cases after removing a section of the greater omentum, the technic carried out is similar to that in the McBurney muscle splitting incision.

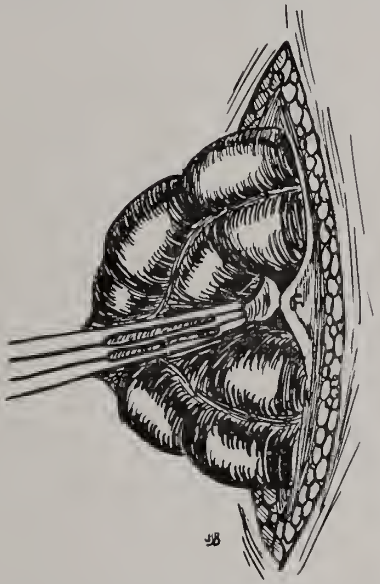

Fig. 2. Modified Mikulicz procedure where the diseased segment has been excised. A small tongue of peritoneum is brought beneath the loop and the incision closed rather snugly around both loops. No sutures in the bowel wall. This is an example of the incidental type of colostomy.

The patient should have been placed on a nonresidue diet for several days preceding the operation and the colon thoroughly cleansed several times daily with a mild antiseptic solution. Nothing should be given by mouth for forty-eight hours following the operation. If these pre- and postoperative principles are followed it is rarely necessary to open the colostomy before sixty hours, at which time it is done in the usual manner with the electric cautery. The opening should be transverse to the bowel with a slight longitudinal incision forming a T. I believe it is better to leave the glass rod for eight or more days as it prevents too early recedence of the colon into the abdomen. Abdominal resection or a posterior resection with anastomosis may then be carried out.

In acute obstruction my choice of operation is a cecostomy because one is assured of being proximal to the colon obstruction and almost any type of colon resection may be carried out. The technic of Gibson is usually followed.

By the term incidental colostomy I mean where the modified Mikulicz procedure is used and which is usually indicated in lesions between the hepatic flexure and mid sigmoid. Here the two limbs of the bowel are brought up through the incision and held firm by two clamps, or preferably a three-bladed clamp, and the diseased segment with its mesentery and glands is excised by cautery. A small tongue of peritoneum is brought between the two limbs and the muscles, fascia and skin closed around the two limbs. No sutures are inserted into the bowel. The upper clamp may be released forty-eight to seventy-two hours later and the lower one may be permitted to slough off or may be

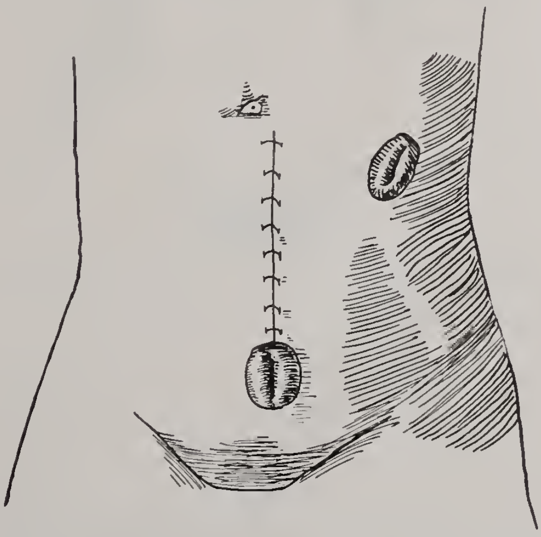

Fig. 3. Permanent end type of colostomy. The segment of bowel at the lower angle of the incision to be excised at the second stage of the operation. This is after the method of Lahey.

taken off a few days later. By crushing the spur between the two limbs the bowel continuity is re-established and in about 50% of the cases the wound closes over itself. If this does not occur the wound may be closed by operative measures.

The indications for permanent colostomies are:

1. In cases of a resected diseased segment, i.e. carcinoma, and inability to re-establish bowel continuity.
2. When the sphincter ani muscle has been sacrificed by injury, disease or an amputation of anus and rectum.
3. To relieve obstruction or pain in inoperable stricture or neoplasm of rectum or colon.

If the status is unknown, as it frequently is in carcinoma of the bowel, I have come to use a lower left rectus incision almost as a matter of routine. This incision permits thorough exploration and frequently a clear view of the abdominal contents. If the lesion is in the lower sigmoid or rectum, a permanent type of end colostomy is usually advisable. If the lesion is inoperable a loop may be brought up through the incision, taking care to ligate a few vessels in the mesentery for about an inch beyond the mesenteric border; the peritoneum, muscles, fascia and skin are then brought through the rent in the mesentery and the abdominal incision closed by interrupted sutures in all layers above and below the loops. After forty-eight to sixty hours, a small transverse incision is made in the loop to permit the escape of gas and feces. Some five or six days later, the bowel is completely sectioned, leaving a proximal and a distal end with a bridge of abdominal wall between them.

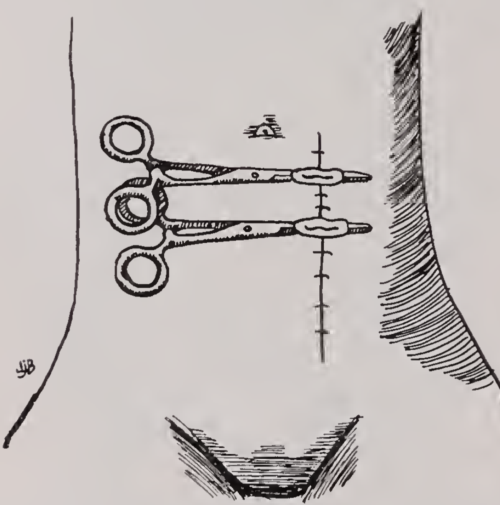

Fig. 4. If the case is inoperable and a left rectus incision has been used, a loop of bowel may be cut through between two clamps with the electric cautery. A bridge of peritoneum, muscle and fascia and skin then separate the loops, giving a better type of end colostomy.

This allows better control of the proximal segment and permits irrigation and cleansing of the lower sigmoid if there are obnoxious discharges or odors. Of late, in inoperable cases, instead of leaving the loop on the abdominal wall, I have applied two clamps to the loop and completely intersected the bowel with the cautery. This does away with the disagreeable procedure of later burning the tissue on a completely conscious patient. At present, I have no reason to regret this procedure. When abdominal distention occurs, some sixty hours after performance of the operation, the upper clamp may be released completely or a shorter clamp may be applied, leaving only a small vent for the escape of gas. If the lesion in the lower sigmoid or rectum is operable but re-establishment of bowel continuity is not advisable, the lower left rectus incision is also an advantage. After the abdomen has been explored and a decision made as to the operability of the lesion, a piece of mesentery is ligated for an inch or so beyond the mesenteric border of the descending colon and sigmoid, two crushing clamps applied close together, the one on the proximal side being inserted through a small diagonal muscle splitting incision halfway between the umbilicus and anterior superior iliac spine some distance away from the left rectus incision. After cutting through between the clamps with the electric cautery, the upper stump is covered with a portion of a rubber glove and drawn through the small incision onto the surface of the abdomen. No sutures are used to fasten the bowel wall to the abdominal wall. The clamp is taped to the abdominal wall. The lower or distal limb is brought down to the lower angle of the incision, the abdominal wall closed with interrupted or continuous sutures to the peritoneum, muscle, fascia and skin. This is according to the method of Lahey, its advantage being that it permits irrigation of the lower sigmoid before the second stage of the operation. When abdominal distention becomes uncomfortable, forty-eight to sixty hours later, the upper clamp may be released. If there is a possibility of re-establishing bowel continuity, this incision has a third advantage in that a small oblique incision a little to the left will permit a loop to be brought out onto the abdomen and a temporary type of colostomy may be made. The left rectus incision in such cases is usually protected with a cotton and collodion dressing, further supported by adhesive strips and additional collodion.

The following selection of operation is usually adhered to in such lesions of the large bowel requiring cecostomy or colostomy:

1. Acute obstruction of the colon.
    - (a) Cecostomy probably preferable in all cases.
    - (b) Inguinal colostomy may be done if low obstruction.
2. Progressive obstructive lesions.
    - (a) Lesions of ascending colon and hepatic flexure need no colostomy or incidental decompression procedure if done in two stages.
    - (b) Lesions from the hepatic flexure to middle sigmoid usually require a modified Mikulicz type of operation. The colostomy is only incidental to the resection and is usually not permanent. A temporary cecostomy or colostomy above the lesion may be done at the first stage and resection with anastomosis at the second stage.
    - (c) Lesions of the rectum and lower sigmoid require at times only a temporary colostomy but usually a permanent end type is advisable and necessary.

When the patient leaves the operating room table, well vaselined gauze is applied to the raw bowel surfaces. After the bowel is opened in the loop type, or the clamps released in the end type of colostomy, frequent dressings and cleansing procedures should be carried out. I prefer to use warm boric or 1-5000 potassium permanganate, or these solutions may be alternated. Hot packs should be applied if the wound begins to look too angry. During the first few days, vaseline gauze should be placed over the raw surfaces following the irrigations. After the first week the wound is cleansed as above, the vaseline gauze is discontinued, and some type of drying powder should be applied over the area. During the stay in bed, adhesive tape ties are used for the dressings but as soon as the patient is up and around a colostomy belt should be worn. During the first ten days a low residue diet is indicated.

In the early days of colostomies some type of rubber bag or metal cup was thought necessary to collect the discharges. However, these were difficult to keep clean, always gave off an odor and frequently resulted in herniations. Many ingenious contraptions have been made to fit over the open bowel to prevent leakage but these are usually uncomfortable and unsuccessful. In my experience a corset of some type has been found most satisfactory. During the last year. I have aided one of my patients in developing a corset-like belt with a laced v-shaped area over the colostomy which can be easily and quickly unlaced to permit the change of dressings. The most practical dressing I have found is a layer of cellucotton directly over the opening, covered by a layer of wax paper. At times it may be necessary to place a thin layer of cellucotton over the wax paper for additional protection. I have also found that many of my patients with properly made colostomies have but one or two discharges of bowel contents during the day and at times only every other day. In fact constipation is sometimes quite a factor, and yet it is not so distressing to the patient.

If the patient is troubled with frequent loose discharges, the colon may be irrigated through the colostomy opening. Various devices have been used for this purpose, perhaps the most simple being an enema bag with the nozzle inserted into the colostomy and the back-flow going into the bucket. Dr. Dudley Smith and Dr. D. S. MacKenney have designed types of metal domes to be placed over the opening, with the returning bowel contents emptying into a basin or toilet through a rubber tube. I believe I have somewhat simplified this procedure and made it less cumbersome by using a male urinal with a metal tube running from the region near the handle of the urinal down to the center of its opening. To the lower end is attached a small piece of rubber tubing which is to be inserted into the colostomy. To the other end of the metal tube a douche bag is attached. The enema fluid may then pass from the douche bag through the metal tube in the urinal, flush out the colon, return through the colostomy opening into the male urinal which is held flush against the abdomen. A patient who is having trouble with frequent discharges is advised to wash out the bowel upon arising in the morning. After he has eaten breakfast and moved around, what little fluid did not return during the irrigation has usually passed out onto the absorbent dressing. The dressing may then be changed and the patient can usually go twelve to twenty-four hours without any more trouble. Naturally paregoric and bismuth preparations may be used at times to an advantage.

Fortunately there is seldom any odor to a colostomy wound after the first two weeks. On several occasions, however, when an odor has been present, I have prescribed daily capsules of Kerol M III which tends to remove the odor from the feces.

LAPSE OF MEMORY

Professor: "I would like a preparation of phenylisothiocyanate."

Drug Clerk: "Do you mean mustard oil?"

Professor: "Yes, I can never think of that name."—Coe Zip 'N Tang.

THE COUNTRY DOCTOR—HIS STATUS*

A. A. CONRAD, M. D.,
Crete, Nebr.

Recent literature, lay as well as medical, says much of "The Country Doctor." Is it because with the change in times people are again to be satisfied with the less glamorous things and will be satisfied with the services of the country doctor just as they are now satisfied to migrate from the cities to the farms?

During the boom days we heard very little of the country doctor. Every one seemed to feel he was being cheated if he could not have the services of a specialist. Medical men saw the advantage of specialism and many jumped from general practice to some specialty without adequate training for it. The fees were higher and all was rosy. Then came the depression or economic interlude, as some choose to call it. Patients had not the money to pay specialists' prices, and they consulted the country doctor or general practitioner for ills for which they formerly went to a specialist. They perhaps were not able to pay the fee of the country doctor either, but they were satisfied to accept his treatment and about 80% of the cases were cured or helped.

A large pharmaceutical house has recently taken up the cause of the country doctor and once a week over the radio lauds his triumphs. The history of medicine is quite evidently written about the general practitioner. Such men did things with what was at hand, and they did them without the advantage of the high class education and training we of later days have enjoyed.

Please do not get the impression that I am making light of the specialties. They have become, especially in recent years, a necessary part of medicine. No one man can perfect himself in all the branches of medicine sufficiently well to successfully treat the more complicated conditions that are constantly arising. For these conditions, men of special ability and training are required. We must have men of this type but we should have a sharper distinction between the specialist and general practitioner and I feel that patients should not consult a specialist unless his physician advises it. This idea may be Utopian.

The fundamental teaching and training of the graduate in medicine is now quite uniform due to the efforts of the A. M. A. and other authoritative agencies. Perhaps the most important thing a physician should know, whether as a young graduate or as an old practitioner, is his limitations. Those limitations vary with the individual and will vary in the different branches of medicine. A man may be quite unusual in his diagnostic ability but do a very crude job of removing a sliver. Such a man should let slivers alone. Nature, if left alone, perhaps would do a better piece of work in removing it, although nature is sometimes slow and devious in her workings.

The country doctor is thrown upon his own resources much more than the man practicing in the city. His general knowledge must be extensive. Recently I read that the country doctor must know a little about much, while the specialist must know much about a little. Competent consultation is not as easily secured in the country as in the city. Hospital facilities are not available on a moment's notice and competent assistance is not always at hand. Therefore the country doctor should be a versatile individual, well trained and self reliant, one who can make a pneumonia tent out of an umbrella and a sheet, and splints from a fence or chicken coup.

A few years ago, before the high cost of medical care held the center of the stage, there was much talk of the high cost of medical education due to the fact that the medical graduates showed a greater tendency to stay in the cities than to locate in the country.

The committee on the cost of medical education decided that the reason a large proportion of the graduates wished to practice in the city was because, since they had spent a small fortune in acquiring an education, they felt entitled to use this education in places where it would do them the most good. I have wondered if these men who stayed in the city did not fear that they might lose the advantage of available x-ray and laboratory aids if they should go into country practice. If so, they were mistaken. A laboratory sufficient to aid in the diagnosis of the majority of cases is not difficult or especially expensive to equip even in the country. As for x-ray, I grant that it is a most convenient aid but if it is not too conveniently available one is much more likely to exercise his congenital diagnostic faculties; namely sight, smell, hearing and touch, and exercise his mental equipment to a greater extent. In my opinion there is too much inefficient x-ray diagnosis. This is one specialty that is a specialty and requires more than the mechanical ability to operate a machine.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

This same committee on the cost of medical education talked of a double standard of medical education. A lower standard, fewer years of medical school. for those intending to practice in the country and a higher standard with more years in school for those students who expected to practice in the city. In other words they would place the man who expected to do a country practice on about the same scale as the osteopath or chiropractor, just at a time when we were criticising both these branches for their lack of adequate training. That appears to be as logical as the majority report on the cost of medical care.

Is the patient in the country any less worthy than the patient in the city that he should have treatment by a doctor less thoroughly trained than his city brother?

It does not seem that appendicitis is any less serious out in the country than in town or the city. In fact some of the most serious cases of this infection, seen in the hospital are those which have been played with in the country by a doctor who is not up on his toes. I have brought some in myself. Fractures of as severe a a nature as those which happen in the city occur in the country. The complications of obstetrics in the country are even more serious because of the lack of quickly available efficient hospital and consultant facilities. The fact that the proper early care of injuries and certain illnesses so often spells the difference between an uneventful recovery and a complicated return to health is evidence that efficient and careful physicians are needed everywhere.

I believe that it can be said without fear of contradiction that the "In God We Trust" method of practicing obstetrics accounts for a very large per cent of invalidism in women who have born children. There are also other methods of practicing obstetrics. There is that method practiced by those who seem to ignore nature and expect things to go as they want them to. They hurry things along, apply forceps unnecessarily, and like those who trust in God leave tears to heal of their own accord, pay little attention to amount of blood loss and other important details. This group accounts for another per cent of invalidism as well as mortality. The women in the country are as willing to accept ante-natal as well as post-natal care as are those in the city if they are educated to it. They are entitled to it. Those to whom they look for education in this line are the doctors. If the doctors do not furnish this information, these women will get it from lay magazines and pamphlets. They will get some of it from this source even though the doctor has used his efforts.

An obstetrical case is not only the delivering of a baby. The mother and foetus need care long before and after delivery. It is difficult to start prenatal care in a small community because the grandmothers think it foolish. They themselves did not have care of this sort and gave birth to anywhere from one to fourteen or fifteen children often without a doctor even at the delivery. If daughter, or worse still daughter-in-law, consults her doctor regularly before and after delivery she is chided for her silliness. But if the doctor is fortunate in delivering an unusually attractive baby for a mother who has had antenatal care and this baby thrives post-partum other women want to have this same kind of care and after a time it will become the style to have it. From then on the battle of educating the mothers is not so stiff. They like to "keep up with the Joneses."

Post-partum care is no less important than prenatal care not only for the patient but for the doctor. It gives him an opportunity to check up on his technique, especially up on his repair work. Uterine displacements can be detected and corrected before they begin to produce distressing symptoms, such as backache, sense of weight, menorrhagia, etc. For a time I advised the patient with a retro-displacement to practice the kangaroo walk and knee chest position in an endeavor to replace the uterus. It so seldom returned to its proper position under this regimen that I do not waste time that way any more. With traction on the cervix, by means of a tenaculum forcepts, and bimanual manipulation, the displaced uterus is usually rather easily replaced and held in position by a properly fitting pessary. During the fourth to eighth week post-partum the uterus is more easily replaced than later and it is more likely to stay in position due perhaps to the fact that the ligaments have still the power to involute after the strain of pregnancy, while if we wait longer the tone does not return to them and a more or less relaxed condition results. During the time I was trying to get reposition of the uterus by posture, I learned of a new technique. One of my patients came in for her post-partum examination and the uterus was in retro-position. I advised the kangaroo walk and knee chest position and asked that she report for re-examination in two weeks. When she returned the uterus was in a normal position. I told her so. and expressed my satisfaction that my orders had brought results and complimented her upon her execution of those orders. Her reply was "maybe they did not do it." When I asked what else might have been responsible she told me this story: She had hung clothes on a line and was chilly. She picked up the basket and ran for the house. As she ran she caught her heel on a brick which stood up higher than its neighbors in the walk, and fell over the basket. She felt a sharp pain in the pelvis, as she hit the basket, but did not think much of it until later in the day she felt "different down there." I have advised other women of this technique but have been unsuccessful in getting any of them to try it.

The cervix perhaps is subject to as much damage as the perineum, especially in the primipara. At the post-partum examination the condition of this structure is of prime importance. Erosions and tears are points of least resistance and are easily infected. Topical applications, tampons and douches require a prolonged treatment and incur considerable expense which usually is not justified by the results obtained. Actual cautery or electro-coagulation will cause these cervices to heal promptly, with a rather flexible scar, seal up avenues otherwise open to chronic infection and of still more importance remove the condition must suitable for cancer, namely chronic irritation. If we are to reduce the incidence of cancer of the cervix we must endeavor to leave the cervix in the healthiest possible condition before we release the woman from post-partum care if it takes a year or more to do it although usually it can be accomplished in a few weeks to a few months.

We complain about the osteopath and chiropractor and at the same time admit that one of the reasons people consult them is because they appear to do something for them. They adjust and manipulate, push and pull, twist and untwist the patient. The fact that this branch of the healing art is able to induce its patients to return time after time is based on doing something, or at least appearing to do something, and no doubt some patients feel, after a treatment, that something has been done. We might take a lesson from these cults and when our patients call upon us, do something besides sit in a chair and talk, prescribe, and ask them to return if they do not "get along." Do something which will impress them with the fact that you are interested and anxious to help them. Do something which will register in their minds as a service rendered.

Another important phase of the country doctor's practice is the care of injuries both mild and severe. Mild injuries are good starting points for serious infections, especially in the hands. Perhaps one of the most important decisions one has to make in these hand cases is when to cut and when not to cut, as well as where to cut and how much. An incision is seldom too large. A large incision, or even one too large. will heal with less tissue destruction, in case of infection, than one too small. Kanavel's book on infections of the hand should be studied by every country doctor and the opportunity to hear Dr. Kanavel talk on these conditions is worth considerably more than one may lose by being absent from his office for the time it takes him to attend such a discourse. After hearing him talk, one may more easily understand his book. The man who must earn his living with his hands is entitled to intelligent care of infections and repair of lacerations. A poor result is deleterious for the doctor as well as the patient. It is a walking reproach whether he deserves it or not. One has to live with these people and unhappy results seem to be always most conspicuous.

In these days of the automobile, cuts are a very common result of even minor auto accidents. Many of these cuts are about the face and are often disfiguring, even though they may have received the best of care. These cuts, when sutured with silk the size of the cracker on the end of a buggy whip are not pretty to look at when healed even if infection has not complicated the situation. Cuts which have gone through the subcutaneous tissues must have the edges in apposition from the base to the skin surface to leave the least disfigurement. Asepsis must be scrupulously practiced. I find wet boric dressings for the first 24 to 48 hours with the application of heat does much to lessen the development of infection where one is at all doubtful of the sterility of the field. The end result is much to be preferred over that secured when a dry dressing has been applied and infection supervenes. In the more serious accidents where shock is a major factor the use of intravenous 50% glucose is a most valuable method at our command.

The open season for auto accidents has again arrived. Let us have on hand a supply of sharp needles, suitable suture material, and sterile dressings in order to save these people as much scarring and disfigurement as possible. Should air travel displace the automobile as the automoble has displaced the horse there will probably not be as much need for this type of surgery as at present. When an air-accident occurs usually the undertaker gets the victim or he is so injured that hospitalization is necessary.

The advent of local anesthesia in the reduction of fractures has given the country doctor a valuable method for handling those types of which he is capable. It usually will do away with the need of a general anesthetic, if sufficient time is allowed for the local anesthetic to act. The reduction is almost painless, and relaxation is quite good.

Allergy occurs in the country as well as in the city. In those indefinite gastro-intestinal conditions especially of the colon as well as in skin, nasal and eye conditions, I think it is well to keep allergy in mind. Whatever allergy is, there seems to be a definite place for it as an etiological factor in a certain number of cases. It may be made another rubbish heap upon which to throw our undiagnosed cases just as rheumatism and neurasthenia have served us in the past; a good shield behind which we may hide our ignorance. We are learning more about allergy and it is encouraging to see a patient's face light up when told that allergy may be playing a part in his complaint. He seems as pleased as when told he has intestinal or summer flu.

Dr. Frank Smithies has laid much stress on the role of the gall-bladder in many skin conditions. I agree with him that some skin manifestations are the result of disturbed gallbladder function. Those cases suffering from urticaria which lasts for days or weeks are often cured by those drugs which stimulate bile flow such as magnesium sulphate, pig bile, etc., and this result does not seem entirely due to increased peristalsis, because other laxatives do not produce the same result. The gallbladder often plays a big part, silently, in gastro-intestinal disturbances such as hyper- and hypo-chlorhydria, intestinal fermentation, colon disturbances, and constipation. Perhaps we are not paying as much attention to the gallbladder as we should. When we have jaundice, or gallbladder colic or an infected gallbladder our attention is called definitely to it but unless we have definite tenderness in that area I wonder if we do not too often forget its existence.

Arthritis is a condition with which we are being confronted more frequently than in the past. I have reference to the rheumatoid type of this disease. For the last several years, until this year, acute arthritis or rheumatic fever has not been as prevalent as formerly but the rheumatoid type has either become more prevalent or we are better able to recognize it in its beginning. Methods of handling this condition are becoming more encouraging and much is being done and written about its treatment. Rather encouraging results are being reported. Here again our old friend allergy is being investigated, we hope with good results. In the last few months I have seen two cases of the acute form of this disease in women in their thirties. It is interesting to note that the mothers of both cases are sufferers from this disease.

Vaccines, either autogenous from focal areas of infection or certain stock vaccines, are apparently of value in the treatment of arthritis. Crowe's vaccines, which we are unable to get in this country are mentioned in several favorable reports. It is gratifying to receive letters from the men doing intensive work on this disease, giving details of their investigations which they do not put into their papers. Dr. Russel Cecil of New York City has been most courteous and helpful to me simply because a letter to him asking for details not evident in his papers expressed an interest in this disease. Most of the men doing special work seem very glad to aid any one interested in their battle against disease. It is characteristic of medical men to help each other and I do not hesitate to write for information from men doing especial work.

Now let us take up the matter of competition. In so many places there are small feuds on between the doctors. This is so silly and unbecoming to professional men that it lowers them in the opinion of the rest of the community. It is very doubtful whether criticism of one's competitor does him any harm. It very often acts the other way. Jealousy or fear are usually at the bottom of such feuds, jealousy because of a larger practice, or more ability, or fear of being slowly squeezed out of the community. If your competitors have more business than you, whose fault is it? Certainly the competitors cannot be blamed. Then perhaps the fault is yours. In my opinion one of the first things to do is to get acquainted with one's competitors. It is remarkable how often acquaintance removes the wolf's clothing from a sheep. The better you know a person the more easily you can make allowance for his discrepancies. If he is a price cutter he may have things his way for a time but soon he will get tired of working at cut rates and when he starts to raise his fees the people will not care to pay them for he has branded himself as a cheap doctor and the brand is very liable to stick. Therefore I doubt the wisdom of cutting fees to meet one's competitor's. It puts one in the same class. If he criticises your work or ability or fees you will hear of it from patients and it is not hard to listen closely, and say very little or remark that perhaps the doctor did not understand exactly what had been done. Sometimes it is wise to ask the tale bearer if he heard the doctor say the things he is telling. Usually he has been told the story. At the first opportunity it is wise to ask the doctor if he made remarks of this kind. If he lies usually you can detect it in his demeanor. If he has made these criticisms and admits it, explanations may change his opinion. If he did not, no harm has been done, in fact you may both learn to be more careful of what is said to patients.

Very often a new patient criticizes his former doctor about the way this doctor treated him. It is not a bad idea to find out if the patient has paid this doctor. You can ask certain types of patients point blank, if he has done so. Frequently he has not. Usually one can stop his criticism by simply saying that you do not care to hear about the other doctor and his faults, for you fear you will be talked about in the same way when the case is over. There are a certain number of people in every community who try to keep trouble brewing between doctors.

In Crete we find it conducive to faith in and tolerance of each other to have an evening meal together at the hotel occasionally and have a chat afterwards. It is "Dutch treats." We find the other fellow is not such an ignoramous as we thought he was. We discuss perplexing cases and remain friendly for two or three or four weeks. When the warm embers of tolerance and charity begin to cool a little we have another supper together. Sometimes we do not eat together for two or three months. These meetings do not consume more than 1½ to 2 hours and each time we seem to find something in the other fellow we did not know he had. We are not all as dumb as we look nor as smart as we would like to have others think we are.

We are all in the classification of medicine. According to our different abilities and personalities we either succeed, remain mediocre or fail. Much of our success or failure is in our own hands. Painted in large letters on the outside wall of a building housing farm implements in our town is a sign which says, "Our service to you is a pleasure to us." If this sign is not a gesture it means much. If we will exemplify these words in our practice the cults are not liable to bother us. A new cult may spring up every so often but, they never last long. Medicine is like the house that was built on the rocks and the winds came and the rains fell and beat on that house and it fell not.

DISCUSSION

S. A. SWENSON, M. D., (Oakland): Two years ago I heard Dr. Conrad read a paper on "The Country Doctor Looks Around," which I enjoyed very much. This is along similar lines.

I have practised in the country for twenty-three years. When I left school, there was a question as to whether to go to the country or stay in the city. I had an offer to stay in the city with a good specialist as his assistant, and probably would have avoided a good deal of trouble if I had, although I would no doubt have had trouble in case I had stayed in the city. We have problems whether in the city or country. The country doctor has his special problems the city physician does not have, and the physician in the city has some problems we in the country do not meet.

One reason I should prefer to practise in the city is the matter of consultation. It is not always easy to call a competent counsel, as Dr. Conrad said, in the country. It is not always easy to obtain counsel.

Dr. Conrad spoke of competition. I do not like that word competitor in the medical profession. We spoke of that in our County meeting not long ago. I do not call my competitor by that name. I call him a colleague. I like that name much better.

As far as jealousies are concerned, we find them in the cities. I can see them among the specialists as frequently as among country doctors. They are not above jealousies any more than we are. It is too bad, but it is human nature. It is true not only in the medical profession, but in business. A business man spoke to me about jealousies among doctors. I referred him to some of his competitors. He is just as jealous of them as I am of my colleague, or as he is jealous of me. It is human nature to be jealous, (especially among the Swedes).

As to the competency of country physicians, when I was first out of school I though I knew more than my colleagues who had had more experience. The same is true now. I see young men out of school who think they have the world by the tail and that they will have no trouble getting started. But it isn't true. Some of my colleagues knew more than I did. There are some things I know that the man just out of school does not know. A young man came to our town a few years ago with this feeling of superiority. He stayed a few years and left. He found we were not quite as dumb as we were supposed to be.

I have practised twenty-three years and have had my share of obstetrics. I lost one woman during the puerperium. I do not think there are many city practitioners who can show any better results. My colleague, I think, has as good a record as mine.

I read a paper on Pneumonia the same time Dr. Conrad read his former paper. I reported a number of cases of pneumonia. In my whole practice I have had less than 10 per cent mortality in lobar pneumonia. Few city physicians can show better results. It is no doubt true that it is easier to treat pneumonia in the country than the city. I do not believe our cases are quite as virulent. I do not believe in treating pneumonias at the hospital. We have a little hospital in our town and I have had patients who wanted to go there. I do not want them there, especially if I have to mix them with other cases of infection. You get more infection and have a more virulent type.

THE IRRITABLE OR UNSTABLE COLON*

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IN TWO PARTS—PART TWO

DIAGNOSIS

The irritable colon syndrome should be suspected in young and middle aged adults, particularly if nervously unstable, giving a long history of intermittent abdominal distress associated with abnormal colonic function. Often the presenting complaint will be relieved temporarily by an evacuation of the bowels. Constipation or diarrhea or both are to be expected. The size, shape and consistency of the stools are frequently abnormal. A discharge of mucus may be noted, pus and blood are usually absent. Attacks are frequently initiated by any factor which lowers the physical health level or subjects the individual to nerve trauma. Indiscretions in diet may be responsible at times. In those cases giving a history of abdominal and bowel symptoms of one year or less, malignancy must be excluded. The irritable colon syndrome usually occurs earlier in life than malignancy of the gastro-intestinal tract. Diverticulitis, mild ulcerative colitis and intestinal parasites should be excluded by fecal analysis, roentgen examination and sigmoidoscopy. Mechanical defects, such as adhesions and anomalies will usually be obvious from x-ray studies. Irritability of the colon, reflexly caused by extra-colonic pathology, such as pelvic inflammatory disease, cholelithiasis and renal colic must always be considered and appropriate system studies instituted if laboratory or clinical suspicion exists. Patients who have been constipated for years and, who only after using irritating laxatives or colon flushes develop abdominal symptoms are better classified as cases of primary colon stasis with secondary catarrhal colitis. The diagnosis of irritable colon seems obvious in many cases after the first interview with the patient but should only be made after excluding all possible causes of colonic dysfunction secondary to a local lesion in the colon or to extra-colonic disease.

THERAPY

Since the ailment is apparently the result of some disturbance of the neuromuscular mechanism presiding over bowel function, treatment may be considered under two headings: (1) Measures directed toward alleviation of the underlying cause and; (2) local measures directed toward the colon.

(1) Since the first consideration concerns itself with the pathogenetic mechanism responsible for the irritability, the measures adopted will depend in any given case upon the etiologic diagnosis. In almost every case attention must be paid to the nervous system. The importance of this factor should be explained and the patient instructed to abstain from those things which have been held responsible for precipitating attacks. This may mean abstinence from bridge parties, curtailment of social or business activities. cutting down on or complete abstinence from smoking. Various adjustments of environmental and domestic relations may be necessary, and all sources of worry and contention removed in-so-far as that is possible. Frequent rest periods and a more leisurely plan of living may be essential. Various types of recreation from work are often necessary. Frequent vacations and change of environment are practically always beneficial. Physical exercise is decidedly advantageous in many cases, acting as a good exhaust for pent-up nervous energy and causing physical fatigue which is so often followed by a healthful sleep. Individualization is, of course, essential in this type of medical advice but it is always wise to lay out a definite program rather than to casually hint at it. If a disturbance of metabolism or ovarian function seems to be of primary importance, appropriate treatment must be attempted along those lines if a good result is to be expected. Unfortunately nothing so definite can usually be found but signs of instability of the vegetative nervous system are not often lacking. This abnormality is primal and basic and often cannot be corrected, unless it may be dependent upon a type of endocrine disturbance. In the cases showing signs of parasympathetic preponderance, calcium and parathyroid therapy may be beneficial.(3)(7) If the patient is allergic some thought should be given to that factor as a possible cause of the irritable colon symptoms. Sensitization tests or an elimination diet may be tried.

Local Measures: The diet should be of a smooth non-irritating type in the beginning. It should be well balanced to contain all the essentials for good nutrition. A carefully taken history of dietary habits often reveals an inadequate ingestion of some essential, such as protein, vitamins or inorganic salts. Correcting such errors in diet may in themselves prove of marked benefit. Considerable ingenuity and tact may be necessary to convince many patients that they can digest a well balanced diet not only without harm but with actual benefit. Ice-cold or very hot food or drinks are contraindicated, particularly during attacks and in cases with diarrhea.

If the capacity of the colon is large and obstinate constipation is present, non-irritating residue in the form of agar or kaolin should be used in sufficient quantity to insure the passage of stools of adequate size. The patients who pass dry fragmented stools should take mineral oil. The disagreeable leaking of the oil so commonly present in cases of spastic colon can be prevented by the addition of adequate quantities of agar or kaolin. All irritating laxatives should be stopped. If constipation is marked magnesium oxide may be used in sufficient quantities to overcome it in most instances. The dose can be gradually reduced as bowel function improves. One of the best drugs in these cases is belladonna. It may be prescribed as the extract with magnesium oxide and kaolin in powder form. One of the favorite prescriptions of the authors is: Ext. bell. gr. ¼, calcined magnesia gr. 10, calcium lactate and kaolin a.a. dr. 1, three times daily before meals. Enemas and irrigations are not used except in emergency during the beginning of the regimen or during an attack in the manner described below. We feel that the routine use of solutions injected into the bowel only tends to irritate the bowel and disturb its normal rhythm.

For relief of pain which may be very severe during the acute exacerbation, principal reliance should be placed upon antispasmodics and sedatives. Atropin with bromides and phenobarbital is an excellent combination. Opiates should be avoided because of the chronicity of the condition and danger of habit. Better results will be obtained if the patient is confined to bed until the attack has entirely subsided. Hot, moist applications or a warm tub bath often help to alleviate the pain. A warm injection of olive oil, cotton seed oil or a solution of barium sulphate may bring about rapid relief.

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SICKLE CELL ANEMIA IN THE WHITE RACE WITH REPORT OF TWO CASES

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This peculiar malformation of the red blood cells with its accompanying anemia and bizarre symptoms was originally described by Herrick in 1910 and called sickle cell anemia.

The phenomenon of sickling of the red cells may occur without the accompanying anemia in apparently healthy individuals. For this unusual trait Cooley coined the word sicklemia, leaving the term sickle cell anemia to describe the real disease state.

INCIDENCE

Sicklemia or the sickling trait occurs in about 7% of all Negroes. Evidently the disease, sickle cell anemia, primarily affects children. A majority of the cases reported have been in Negroes and from the southern portion of the United States. It is interesting to note that only two reports are in the literature of its incidence outside the United States. The youngest case reported was in an infant seven months old. Males have the disease more frequently than females. The incidence being about two to one. Is the disease confined to the Negro race? In a recent publication Rosenfeld and Pincus carefully analyze the reports of the disease in the White race and describe a case in an Italian boy whose father was born in Reggio, Calabria. Three generations of the family show the sickling trait. Five generations of the family can be recalled by the oldest living members and no racial characteristics of the Negro race can be recalled or are present in the family at this time. In 1929 Cooley and Lee detail a case in a boy of Greek parentage. The ancestry was carefully traced and no definite admixture of Negro blood was apparent. In 1931 Sight and Simon report the disease as occurring in a boy of Scotch-Irish parentage. but fail to eliminate the possibility of an admixture of Negro blood in the patient's family. In my two cases herewith reported the father and mother were born in Carlentini, Sicily. I was unable to trace the family history further than the present generation. The father has some of the features of the Negro. His hair is somewhat kinky. The color of his skin is distinctly dark. One son who has no sickling also possesses some of the characteristic facial appearance of the Negro. I am reliably informed there is more or less intermarriage between the Sicilians and the Greeks. In view of the early history of Sicily. Italy, and Greece, and their geographical proximity to Africa, it would seem the possible if not the probable admixture of Negro blood in both these races. Sicily was originally a province of Carthage. Africa, and was inhabited by Greeks. Italians. and Africans. It follows then that the possible admixture of Negro blood is not entirely eliminated in any of the cases thus far reported as occurring in the White race.

ETIOLOGY

The formation of sickle cells in the blood is not primarily a disease unless it be accompanied by an anemia and the characteristic symptoms; then the disease is termed sickle cell anemia. Evidently it is a familial disease and obeys the Mendelian law of the inheritance of the dominant trait. Cooley concludes that the disease is familial, congenital, and hereditary. Graham, Hahn, and Gillespie report the occurrence of a green streptococcus at autopsy and by culture from a spleen removed at operation, but further confirmation is necessary before the streptococcus can be regarded as the cause of sickle cell anemia. Repeated blood cultures have been done by various observers, but with negative findings.

MECHANISM OF SICKLING

Hahn and Gillispie conclude that anoxemia is responsible for the sickle shaped forms in susceptible red blood cells. They observed that when carbon dioxid, nitrous oxide, and nitrogen was introduced into the medium containing susceptible erythrocytes the normal round cells assumed a crescent shape, but when oxygen was added in a concentration of more than 6% the sickle cells assumed their normal shape. From this they concluded that the hemoglobin was responsible for the sickling. When the hemoglobin was uncombined sickling occurred, but when combined with oxygen the cells were normal in shape. The frequent lung complications occurring with sickle cell anemia seemed to add weight to this possible cause. Dolegal and Stitt examined tuberculous patients who were suffering from sicklemia and concluded that "chronic anoxemia caused by disease or compression of the lungs is not a factor in the development of active sickle cell anemia from sicklemia". Therefore, it would seem that laboratory experimentation while apparently assigning anoxemia as the cause of sickle cell anemia must be discarded because of clinical findings to the contrary.

A more logical explanation of the formation of sickle cells and the sequence of pathologic change is evident from the literature. Various observers have noted the fact that sickling takes place very early in the life cycle of the red blood cells. The transformation evidently takes place in the reticuloendothelial system—in the spleen, in the red bone marrow, and liver. These sickle cells when thrown into the blood stream act as foreign bodies and are phagocytosed. Anderson and Ware describe the sequence of events as follows: "Young erythocytes are transformed into sickle cells in the liver, spleen, and bone marrow. As fast as they are released they are phagocytosed as foreign bodies. At first the sickle cells are readily destroyed by the phagocytes. In order to produce new cells the bone marrow is stimulated to greater activity. as is evidenced by the increase in reticulocytes. The spleen and liver enlarge to take care of the extra burden of young cells and thus a vicious cycle is established. As the disease progresses the bone marrow is unable to properly carry on this increased work and fewer new cells are produced. The spleen decreases in size because the extra cells are no longer stimulating it to over-function. The liver, however, does not decrease in size, possibly because its other functions make it less responsive to errors of the blood forming organs." All of the common symptoms of the disease can be explained on the basis of this theory.

CASE REPORT

No. 1. L. B., age 11 years, was admitted to my service at St. Joseph's hospital, November 24, 1932. His chief complaint at that time was intermittent attacks of jaundice. He had had similar attacks for the past five years. He also complained of intermittent attacks of abdominal pain.

Family history: Both the father and mother were born in Carlentine, Sicily. It has been impossible to trace the ancestry of these parents, but so far as they have knowledge there has been no intermarriage or

BLOOD STUDIES IN SICKLE-CELL ANEMIA (L. B.)

Date	Hemoglobin Per Cent	Erythrocytes Million Per c. mm.	Color Index	Leukocytes Thousands Per c. mm.	Poly. Neut. Per Cent	Poly. Eosin. Per Cent	Poly. Baso. Per Cent	Lymphocytes Per Cent	Mononuclears Per Cent	Myel. Neut. Per Cent	Anicocytosis	Poikilocytosis	Reticulocytes Per Cent	Sickle Cells	Initial Hemolysis Per Cent	Not Complete Hemolysis Per Cent	Macrocytes
11/16	48	3.08	0.8	9.2	50	6	2	39		2	marked			some			
11/21	42	2.3	0.9	13.6	46	5	2	40	3	4	marked	many		many red			
11/28	56	2.7	1.03	19.8	37	6		52	5		slight	some		fewer			
12/1	70	2.4	1.04	14.8	58	2		40			present	present					
12/3	52	2.2	1.1	15.8	32			66	2		some	some		many			
12/22	60	3.1	0.9	21.4	46	2		48	4				4.35	many	.40	.28	
12/27	36	2.3	0.7	14.6	74			26						790,000			
1/4	43	2.5	0.8	26.3	58	5	1	35	1					some			
1/9	57	2.9	0.9	25.9	58	4		38						some			some
1/20	52	2.6	1.	31.7	68			22	1	8				310,000			

Vanden Berg no direct reaction. 15 units of bilirubin. Test for uribilinogen is positive 1-20 icterus index 30.

Whole blood iron 27.10 gm. Plasma blood iron .72 gm.

BLOOD STUDIES IN SICKLE-CELL ANEMIA (S. B.)

Date	Hemoglobin Per Cent	Erythrocytes Million Per c. mm.	Color Index	Leukocytes Thousands Per c. mm.	Poly. Neut. Per Cent	Poly. Eosin. Per Cent	Poly. Baso. Per Cent	Lymphocytes Per Cent	Myel. Neut. Per Cent	Anicocytosis	Poikilocytosis	Mononuclears	Reticulocytes Per Cent	Sickle Cells	Initial Hemolysis Per Cent	Not Complete Hemolysis Per Cent
11/22	52	3.5	0.7	20.7	27	1		70	1	marked	marked			many		
12/2	55	2.93	0.9	21.6	34	1		64				1		less		
12/12	60	2.64	1.1	19.35	35	1		62				2		few		
12/22	55	3.27	0.8	23.6	40	3		53				4	1.35	few	.42	.28
12/27	55	2.96	0.9	26.5	84			12				2		160,000		
1/3	50	2.67	0.9	32.	48			52						350,000		
1/9	50	2.78	0.9	19.6	34	6		60						some		
1/17	52	2.81	0.9	17.9	42			44	1			6		280,000		

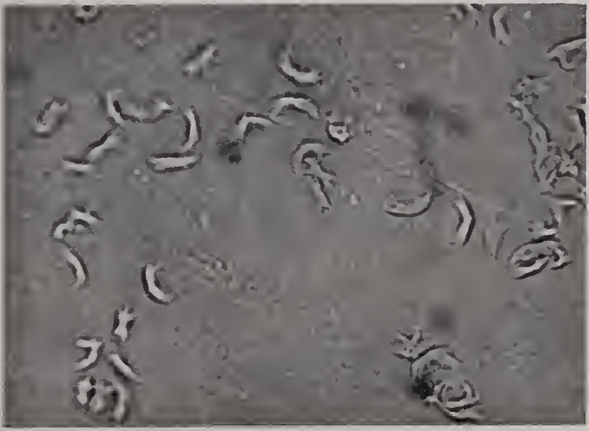
admixture of Negro blood. The oldest brother was born in Sicily. His blood contains no sickle cells. He is married to a girl of Irish extraction. They have one baby boy, three months old. The baby's blood is negative for sickling. The father, mother, two brothers, and one sister, do not have sickle cells in their blood. One brother has sickle cell anemia and is reported herewith.

History of present illness: For about three months prior to admission he was more or less jaundiced. He had been examined several times prior to admission, but the only positive finding noted was the varying intensity of the jaundice plus an icteric tint to the sclera. He complained of intermittent attacks of pain in both knees, both elbows, and shoulders. He had suffered attacks of acute abdominal pain with vomiting during the attack. At various times he had complained of headache. He remained in the hospital for two months, during which time his jaundice was more or less persistent. He complained at times of slight abdominal pain and pain in either wrist joint, and in the knee joints. At one time he suddenly complained of a severe headache; his temperature rose to 104 degrees, and he seemed quite ill for forty-eight hours. On two different occasions the posterior cervical glands became enlarged and painful.

Physical examination: A well developed boy with none of the characteristic features of the Negro. His skin is jaundiced and the sclera are icteric. The liver was enlarged about two fingers breadth below the costal margin. The spleen was not palpable during his stay in the hospital. A slight blowing systolic murmur was noted over the precardium. This murmur was not transmitted and would appear and disappear at variable times. The tonsils and adenoids had been removed eight years previously. There were no scars or ulcers on the extremities. X-ray examination of skull and long bones was negative.

Laboratory data: The urine examination was negative. The Wassermann test was negative. So far as I am aware this is the first reported test of the iron content of the blood in sickle cell anemia. It was done in the laboratory of Dr. A. Sachs, Omaha. The report of this examination will be found in the accompanying chart.

Course: The patient was in the hospital approximately two months, during which time the blood studies were conducted. He was given the Murphy-Minot diet during the greater portion of his residence in the hospital. He was given ventriculin for about three weeks. Eli Lilly and Company provided me with extralin capsules and these were administered for about a month. Neither the diet, extralin, or ventriculin apparently had any influence on the blood picture. We did not regard it as necessary to transfuse because of the fact that after all transfusion is but temporary. Removal of the spleen has not been followed by satisfactory results; so we did not advise this procedure. The boy left the hospital generally benefitted by his stay there. His jaundice had improved, but his blood picture remained about the same.



Microscopic appearance of the red blood cells in Sickle Cell Anemia.—L. B.

Case No. 2. S. B., age three years; brother of L. B. Entered the hospital because of cough and fever, and abdominal pain. History of past illness negative.

Present illness: For about one year he has had several attacks of cough, abdominal pain, and fever. He has been slightly jaundiced for about six months prior to entrance in hospital. These attacks of cough and fever would last for four or five days, then he would completely recover only to have a recurrence at a variable interval. The jaundice has persisted and has been more or less pronounced for about one year. During these attacks of cough and abdominal pain he would complain of pain in both knee joints or in both wrist joints.

Physical examination: A well developed boy with none of the facial characteristics of the Negro. The sclera are slightly icteric. Numerous rales are present over both lung areas. The heart sounds are normal. The liver and spleen are not palpable. The cervical lymph glands are palpable.

Course: He remained in the hospital about two months, during which time he had two attacks of fever, abdominal pain, pain in the knee, ankle, and wrist joints, and cough. He recovered from both attacks without complications. His jaundice persisted throughout his stay. X-ray of the skull, right arm, and right leg showed no evidence of demonstrable bone pathology, which is said to be characteristic of sickle cell anemia. He developed a soft blowing systolic murmur at the apex, which persisted for about one week and then disappeared. His liver became enlarged about two fingers breadth below the costal margin. This enlargement persisted for about ten days, since which time his liver has not been palpable. At no time was the spleen enlarged.

Treatment: He was given the Murphy-Minot diet throughout his stay. We gave him El. Copper and Iron for about one month. We then gave him extract of red bone marrow, beginning December 27, 1932, and every fourth day thereafter for two weeks we administered adequate amounts intramuscularly of sulpharsphenamin with the thought in mind of stimulating his lymphatic system. Nothing that we did seemed to have any influence on his disease. We did not advise splenic removal, nor did we advise blood transfusion.

SUMMARY

1. Two brothers of Italian parentage with sickle cell anemia are reported, the characteristic blood findings are recorded. 2. The iron content of the blood and of the blood plasma was done on one patient. 3. The geographical situation of Greece, Italy and Sicily, from which countries nearly all authentic cases as occurring in the White race have originated, and the early history of these countries with their relationship to Carthage, and the probable admixture of Negro blood, is brought to your attention. 4. The apparent therapeutic uselessness of the Murphy-Minot diet, liver extracts, and iron and copper is recorded.

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A certain surgeon who was very young and also rather shy was invited to dinner by a lady who was at least fifty, but frivolous enough for twenty. At dinner, she asked the young surgeon to carve a chicken, and not having done so before, he failed lamentably. Instead of trying to cover his confusion the hostess called attention pointedly by looking down the table and saying loudly:

"Well, you may be a very clever surgeon, but if I wanted a leg off I should not come to you to do it."

"No, madam," he replied politely, "but then, you see, you are not a chicken."

NEWER CONCEPTS OF RHEUMATIC FEVER*

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Clinical and pathological observations emphasize the importance of rheumatic fever as a cause of heart damage, and, therefore. as a cause of death. In our last 1,000 autopsies death was due in 166 instances to heart disease. Rheumatic fever was the etiological factor in 19% of the heart cases, and 3.2% of the total deaths.

One can best appreciate our present concept of rheumatism by tracing its evolution:

1. Historical—acute arthritis involving successive joints.
2. Valve disease—Bouillaud (1) (1836)—association of valve disease and arthritis noted.
3. Valvular endocarditis—interest centered on the inflammation of the valves.
4. Submiliary focal nodules—Barlow and Warner (2) (1881)—similarity of subcutaneous nodules to acute rheumatic endocarditis.
5. Bacterial etiology—Triboulet and Coyon (3) (1897)—microorganisms isolated as cause of rheumatism.
6. Myocardial lesions—Aschoff (4) (1904—described nodules in myocardium. Recognition that endocarditis is only part of cardiac lesions.
7. Valvulitis—Coombes (5) (1924)—diffuse lesion of valve.
8. Persisting indwelling widespread inflammation of fibrous tissues of body—Swift (6) (1925).
9. Acute attacks allergic—Swift (7) (1928).

The interesting new conceptions of rheumatic fever, as we understand the term today. are that the disease:

1. Is a widespread fibrositis, especially apt to involve heart and joints.
2. Causes a diffuse valvulitis instead of superficial endocarditis.
3. Is of variable duration, but apt to be a chronic indwelling infection with acute allergic manifestations.

1. WIDESPREAD FIBROSITIS

Proliferative and exudative lesions are found in rheumatic fever. The first are perivascular, and are seen in subacute and chronic conditions. The latter characterize the acute exacerbations, and are seen in the periarticular structures. The widespread nature of these lesions, as compiled from the writings of Swift and Boyd(8) and partially verified in our own material, is indicated in the following:

PATHOLOGY OF RHEUMATIC FEVER

Lesions of Different Organs

1. Heart
    - Myocardium—Aschoff nodules and diffuse lesions
    - Endocardium—Valvulitis
    - Pericardium—Focal and diffuse lesions
2. Aorta
    - Perivascular collections in adventitia
    - Diffuse lesions in intima
3. Peripherial Vessels—Kidney, lung, ovary, testis and pancreas
    - Panarteritis
    - No thrombosis
    - Subsequent vascularization
4. Joints
    - Aschoff nodules in synovia, capsule and periarticular tissue
    - Edema and exudate in joint
5. Brain
    - Perivascular round cells
    - Thrombosis and endothelial proliferation
    - Corpus striatum, cerebral cortex and meninges
6. Lung
    - Extensive rubbery consolidation
    - Proliferation of capillary endothelia
    - Multinucleated cells in alveoli
    - Aschoff bodies in fibrous septa
    - Insidious onset

The most striking and characteristic histological finding in rheumatic fever is the Aschoff body, which may be summed up as follows:

SUBMILIARY NODULE OR ASCHOFF BODY

Distribution—Heart valve, muscle and pericardium
  Synovial membrane and periarticular structures of joints
  Subcutaneous
  Meninges and brain

Structure—Necrotic center of collagen
  Large Aschoff cells
  Lymphocytes, plasma cells and polys
  Peripherial fibroblastic proliferation

No one case exhibits all of the lesions mentioned above, but the following may be regarded as typical:

Case 28185—2, R 1582, C. M., male, 11 years.

Clinical—Recurrent attacks of fever and polyarthritis for 2 years.

Anatomic diagnosis (C.S.M.)—Recurrent rheumatic heart disease manifested by verrucous mitral endocarditis, fibrinous pericarditis, left ventricular hypertrophy and dilatation; acute broncho-pneumonia, lower lobe, bilateral; acute tracheobronchitis; congestive heart failure with chronic passive hyperemia of liver, kidneys, and spleen; cloudy swelling of kidneys, ecchymoses on body surface.

Necropsy—"The heart is markedly enlarged, extending to the left axillary line. The pericardium contains only about 10 cc. of cloudy fluid. There are many tiny warty vegetations along the line of closure on the auricular surface of both mitral cusps, while all other valve cusps seem essentially normal. There is also a slight diffuse thickening of the substance of the mitral valve cusps, especially marked near the line of closure."

Microscopic—Sections from different parts of the heart so well exemplify the fact that rheumatic fever is a pancarditis, that a brief description seems warranted.

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*Part of paper read before Sioux Valley Medical Society at Sioux City, Iowa, January 23, 1933.

1. Apex of left ventricle—Aschoff bodies and more diffuse exudative collections in stroma. Productive inflammation of pericardium, with disappearance of mesothelia and some fibrin on the surface. Fibroblasts growing into the fibrin and organization in progress.

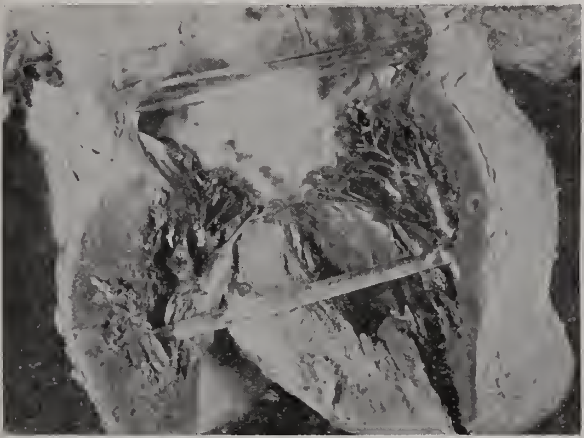

Fig. I—R1582-610F—Rheumatic Mitral Valvulitis.

2. Interventricular septum—about one vessel there are three Aschoff bodies. In the septa there are areas of more diffuse infiltration.

3. Right ventricle—Rare Aschoff body in the muscle. Same type of pericarditis as described above.

4. Posterior wall of left auricle—Aschoff bodies in the endocardium. Diffuse inflammation of the myocardium. Organizing pericarditis.

5. Right auricle—some diffuse involvement. No Aschoff bodies.

6. Posterior mitral leaflet—diffuse infiltration of lymphocytes beneath the surface. Diffuse fibrosis and hyalinization deep in the valve substance. Superficial loss of valve substance with thin fibrin thrombi over denuded areas. No organisms in the thrombi. Old scars. Excessive vascularization. No Aschoff bodies.

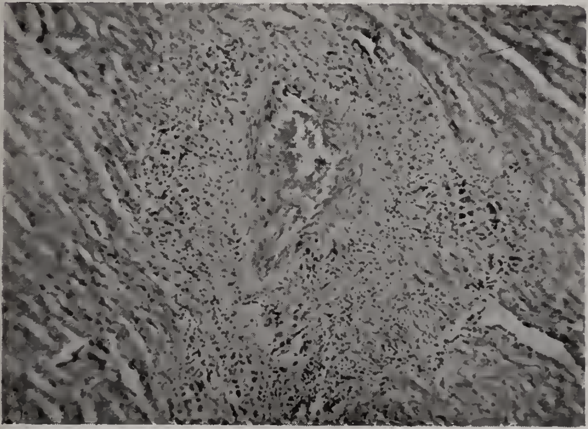

Fig. II—R1582-610G—Low power photomicrograph showing four Aschoff bodies about a blood vessel in the interventricular septum.

7. Parietal pericardium—Same type of organizing pericarditis.

2. DIFFUSE VALVULITIS

For years it has been recognized that rheumatic fever produces a pancarditis, but it is only within the past few years we have recognized the pathogenesis of the valve lesions. Opinions differed as to whether the virus entered the valve through its surface or through its capillary blood supply. Interest centered upon the tiny vegetations on the valve surface. We now believe the endothelial surface of the valve is damaged only after a diffuse inflammation of the valve substance has extended to the surface. Swift(6) has examined heart valves from four patients dying within two and a half weeks of the onset of rheumatic arthritis and has demonstrated typical rheumatic changes in the valve substance even before verruca formation. After the endothelial surface of the valve is damaged, tiny small verruca form in straight lines usually on the auricular surface of the mitral valve cusps along the line of closure, and not at the extreme edge. There is an increased vascularity of the valves. Fibroblasts proliferate and form fibrous tissue, which later contracts and distorts the valves. The tiny thrombi on the surface are soon invaded and organized. They do not tend to become large and crumbly and cause embolism.

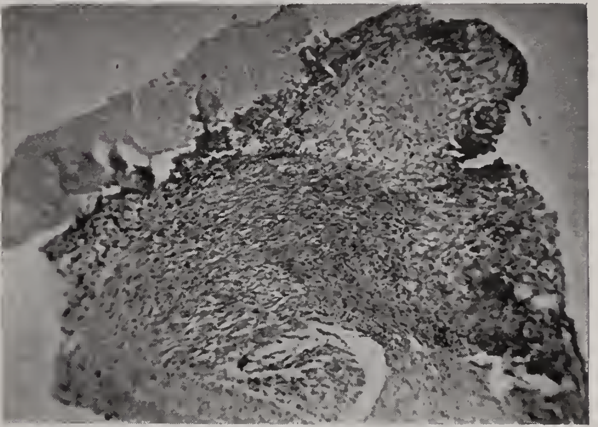

Fig. III—R1582-610K—Photomicrograph showing diffuse valvulitis with rheumatic vegetations on the surface.

An appreciation of the fact that this is a valvulitis beginning in the valve substance and associated with the formation of fibrous tissue enables us to understand the thickened, shrunken, distorted, and sometimes calcified old vascular defects encountered in chronic rheumatic fever.

3. CHRONIC INFECTION WITH ALLERGIC MANIFESTATIONS

Recurrent attacks of rheumatic fever are common, but our interpretation of these recurrences is changing. Instead of regarding them as independent reinfections from outside the body, we now regard them as often due to repeated disseminations from persisting foci within the body.

There is great variability in the action of the body to the rheumatic virus. Sometimes death occurs early from extreme toxicity; in other cases there is apparent complete recovery. More often, however, there are recurrent acute attacks. Swift(6) has pointed out the resemblance of this chronic type to tuberculosis and syphilis. At first, in children, one is apt to see a widely disseminated infection. Later, in adults, there is a tendency to focalization in certain tissues which seem to have developed a hypersensitiveness towards the particular poison. The persisting Aschoff bodies indicate the persistence of the infection.

The following case indicates the persistence of the infection, as indicated by Aschoff bodies in the myocardium:

Case 11231—2, R 148-1929, J. B., male, 35 years.

Clinical—Dyspnoea for 1½ years. Had pneumonia two years ago and has had heart trouble since. Six months ago his ankles swelled and he has had bloody expectoration. No definite history of rheumatic fever. Final clinical diagnosis was mitral stenosis with cardiac decompensation.

Anatomic diagnosis—chronic rheumatic heart disease with old valve defects (extensive calcifying mitral valvulitis), acute tricuspid endocarditis, atrophy of left ventricle, hypertrophy and dilatation of right ventricle, mitral stenosis and tricuspid regurgitation; thrombosis of the right pulmonary artery with hemorrhagic infarcts of the upper and lower lobes of right lung; thrombosis of the left auricle; passive congestion of the liver, spleen, kidneys, and lower extremities, brain and meninges; lymphadenitis, peribronchial, tuberculous, chronic, caseating and calcifying; fibrous pleuritis, right; anthracosis, pulmonary and peribronchial lymph nodes.

Necropsy—(B.C.R.)—"The heart is very large and broad. The right auricle is tremendously distended with postmortem blood clots and practically the entire anterior surface of the heart is composed of the right ventricle and auricle. The descending branch of the left coronary artery runs along the extreme left boundary of the anterior cardiac surface. The right ventricle is partially distended with postmortem blood clots and the tricuspid valve orifice is about 17 cm. in circumference. There are some tiny fresh vegetations on the auricular surface of the tricuspid valve cusps. The foramen ovale is closed and there are no thrombi in the auricular appendage. The pulmonary artery is unchanged in its first subdivision. On carefully dissecting the pulmonary artery out into the right lung, however, there is found a thrombosis of the vessel leading to the lower lobe of the right lung, plugging the lumen of the vessel leading to the infarcted area. The left auricular appendage is partially filled with a thrombus, while the auricle itself is partially filled with postmortem blood clots. The mitral orifice, viewed from above, is a mere slit in a hard, calcified area. The mitral valve cusps are fused in a hard calcified mass, on the upper surface of which there are a number of ulcerations. When water is poured into the left auricle it runs rather slowly through this orifice. The wall of the left ventricle is only about 8 mm. thick, and the aortic valve cusps are essentially unchanged."

Microscopic—"Chronic left auricular endocarditis; rheumatic aortitis; rheumatic myocarditis."

It will be noted in the above that there was no history of rheumatic fever, although it had undoubtedly existed for years. At death, although there was no clinical evidence of an acute attack, there was activity in the valve lesions, while in the myocardium there were the Aschoff bodies of persisting infection.

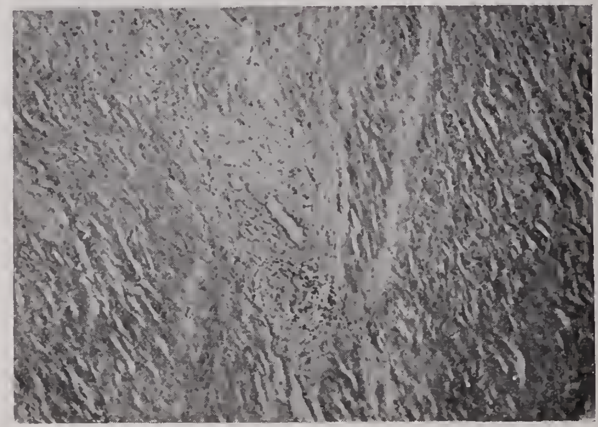

Fig. IV—R148-1929-610-O—Aschoff bodies around blood vessel in interventricular septum.

In discussing the allergic aspects of rheumatic fever, available evidence suggests streptococci, probably variable in type, as the causative agent. The evidence regarding the etiology may be summed up as follows:

ETIOLOGY OF RHEUMATIC FEVER

1. Arguments Favoring Streptococcus—Clawson (9) (10) (1925, 1929)
    - a. Cultured from blood and joint fluids in most cases
    - b. Bacterial endocarditis not sharply distinguished from rheumatic
    - c. Experimental streptococcic lesions in animals closely resemble lesion in man
    - d. Similar allergic reactions to streptococcus in rheumatics and in animals experimentally sensitized to streptococcus.
2. Summary of Work on Subject—Jordan (11) (1930)
    - a. Little doubt that rheumatic fever due to infection with micro-organism
    - b. Many different organisms can cause joint disorders in man
    - c. A specific etiological agent has not been satisfactorily proven for rheumatic fever as yet.

The evidence that bacterial allergy is important in the pathogenesis of rheumatic fever may be summed up as follows:

1. Resemblance between manifestations of rheumatic fever and some tissue reactions in syphilis and tuberculosis, which are admittedly allergic—Swift(6).

2. Production in rabbits of hyperergic state by suitable inoculation with non-hemolytic streptococci. The allergic state is manifested by a papular eruption after intracutaneous inoculation with the organism or filtrates, and interstitial

keratitis after instillation with a drop of the culture.

3. The allergy is not highly specific since animals rendered hypersensitive to one strain react to closely allied strains.

4. Most patients in acute stages of rheumatic fever, and many who have apparently recovered, show skin hypersensitiveness of filtrates of certain strains of streptococcus viridans as well as filtrates of a special group of anhemolytic streptococci described by Birkhaug(12).

5. After intravenous injection of nonhemolytic streptococci the occurrence in rabbits and humans of a febrile reaction resembling that seen after tuberculin injection in a tuberulous individual.

6. An agar focus infected with the allergizing streptococci will maintain the hyperegy for months, while intravenous injection fails. The agar focus is conceived of as an area where the allergizing substance is produced and whence it spreads to the allergic tissues.

A consideration of the above findings reported by Swift, Derick. and Hitchcock(7) suggests that the tissues of the patient are more important than any one type of streptococcus, and helps to clear up the confusion resulting from the recovery of various types of streptococci from patients with rheumatic fever.

CONCLUSIONS

Evidence from the extensive literature, as well as from our own limited autopsy experience, indicates that rheumatic fever is probably due to a variety of streptococci, and that the damage is to the fibrous tissues of the body with a predilection for the heart. The manifestations, extent and duration of involvement vary from a short trivial infection to a prolonged course with persisting infection indicated by the presence of Aschoff bodies, and repeated exacerbations due to flareups in hypersensitive tissues subjected to fresh inundations by bacteria or toxins liberated from a persisting focus, or freshly introduced from the respiratory tract.

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SYMPATHETIC INFLUENCE IN DISEASE*

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In the field of neurosurgery, none is more fascinating or the results more gratifying in properly selected cases than in surgery of the autonomic system. Both Lord Moynihan and W. J. Mayo have expressed the opinion that much of the future advance in surgery lies in the direction of the autonomic nervous system. Although complete understanding of its anatomy and physiology is still wanting, yet the present knowledge gained from anatomy, physiology, experiment, and the effects of section of the sympathetic fibers has proven that an upset of the normal sympathetic-parasympathetic balance results in altered function.

"The sympathetic nervous system is an aggregation of ganglia, nerves, and plexuses through which the viscera, glands. heart, blood vessels, and smooth muscles receive their innervation. In addition to the sympathetic fibers, the autonomic nervous system contains two streams of visceral efferent fibers called the parasympathetic system, the cranial arising from the 3-7-9 and 10 cranial nerves; the sacral from the 2-3 and 4 sacral nerves. According to Ransom and Kuntz, most of the sympathetic nerves contain sensory fibers which convey impulses from the viscera to the spinal cord."

The sympathetic and parasympathetic fibers are, everywhere, antagonistic. Preponderance on one causes disturbance in function.

VASCULAR LESIONS OF THE EXTREMITIES

Investigation of the results following section of all the sympathetic fibers of an extremity show complete vasomotor paralysis in the limb involved. The release of the constrictor fibers of vessels results in increased blood flow through the capillaries, increased temperature to the part, abolishes sweating, and the pain accompanying certain trophic disturbances may be relieved. Since, however, section of sympathetic fibers releases only vessels which are constricted by vasoconstrictor influences, there is a sharp distinction between vasospastic and occluded vessels. We should not expect to open occluded or to relax stiff arteriosclerotic vessels.

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Before deciding upon sympathectomy in vasospastic conditions, it must be quite certain that the case presents definite evidence of sympathetic hypertonicity.

Vascular disease of the extremities is easily diagnosed by the history and careful clinical examination, but the differentiation between occlusion and vasospasm can only be determined by temporarily abolishing sympathetic vasoconstrictor control. In vascular disease due to mechanical plugging, or where the elasticity of the vessels have been lost, as in arteriosclerosis, there will be no capillary vasodilatation. On the other hand, where vaso-spasm is responsible, as in Raynaud's disease, capillary vasodilatation will follow. With vasodilatation, there is an increased temperature of the part due to the increased flow of blood.

Sympathetic vasoconstrictor control is temporarily abolished by several methods. It has been shown that temporary relaxation of sympathetic fibers follows the injection of non-specific protein, nerve block, spinal or general anesthesia.

When using foreign protein, the mouth and surface temperature are taken before and after injection. The rise in oral temperature is subtracted from the rise in surface temperature. "This increase divided by the number of degrees increase in the temperature of the blood gives a figure which in simple terms indicates that for every degree rise in the temperature of the blood there is in the temperature of the skin a certain number of degrees rise which is of vasomotor origin." The result has been called by Brown "the vasomotor or vascular index."

The higher the index, the greater is the amount of vaso-spasm which can be relieved by sympathectomy. On the other hand, if there is no increase or a low index, it is due to occlusion or arteriosclerosis which is not relieved by sympathectomy. In many cases of Buerger's disease, testing discloses vasospasm with a satisfactory index. Sympathectomy in these cases by opening the collateral vessels relieves the agonizing pain and, either, prevents amputation or makes a much lower amputation possible. Unless the rise in temperature of the skin of the digits is two or more times greater than the oral temperature, the condition is considered inoperable. Foreign protein injection and sympathetic nerve block, in addition to the change in temperature, also tells us whether the pain in trophic disease can be relieved. These methods require hospitalization.

Because it is rapid, simple, and an office procedure, I have been employing nerve block. Morton and Scott have found that the level for conduction block anesthesia is 30.5° C. (89.9° F.) at a room temperature of 20° C. (68 F°.). After exposure of the extremities to room temperature for at least thirty minutes, surface temperature readings are made. In the foot, the posterior tibial nerve just below the inner malleolus is blocked with novocaine. This produces anesthesia of the sole of the foot. For the hand, the ulnar nerve at the elbow or the median nerve just above the wrist is blocked. If anesthesia is obtained, temperature readings are again taken. If the surface temperature rises to normal vasodilatation level. the trouble is due to spasm. If there is little or no rise, it is due to occlusion. When it is due to a combination of both, the proportion is determined by subtracting the surface temperature from the normal vasodilatation level. The number of degrees by which there is failure to reach the normal vasodilatation level is the occlusion index.

It has been conclusively proven by Kramer, Todd, and Potts that the vasomotor innervation of the arteries of extremities corresponds to the musculo-cutaneous somatic distribution, except for the short distance where the principal arteries leave the aorta. Thus, stripping of vessels for short distances, as in the Leriche operation, is anatomically unsound. Complete vasodilating effects are accomplished, only, when all vasomotor fibers are severed by section of a sympathetic trunk, by ganglionectomy, or by complete ramisection.

ARTHRITIS

The application of heat has long been an established procedure of merit in the treatment of arthritis. If relief is obtained by baking and surface temperature can be permanently elevated, sympathectomy should be seriously considered. It should, however, be used only in cases with cold clammy extremities, with high vasomotor index, with little or no bony pathology other than atrophy on the x-ray films, and, in whom, all other methods of treatment have been unsuccessful.

CHRONIC CONSTIPATION

In the cases subjected to lumbar ramisection by Hunter for spasticity. he noted constipation was relieved. This knowledge was utilized by Judd and Adson in performing lumbar ramisection and ganglionectomy for chronic dilatation of the colon, Hirschsprung's disease, with success. Learmonth and Markowitz have shown that nerves in the pelvic mesocolon of the dog actively inhibits peristalsis and section of these nerves increase colonic peristalsis. They have, also, shown that the internal anal sphincter is controlled by the presacral nerve. Learmont's operation consisting of section of the presacral and inferior mesenteric nerves has been accepted as the most satisfactory treatment of Hirschsprung's disease.

ANGINA PECTORIS

Pain from the heart and ascending arch of the aorta is conveyed to the sympathetic trunk by post ganglionic unmyelinated fibers running in, (a) the superior, middle, and inferior cardiac nerves to the corresponding cervical sympathetic ganglion, (b) nerves which run directly across the mediastinum from the posterior cardiac plexus to the upper dorsal sympathetic ganglion. The painful stimuli are then carried to the spinal cord over preganglionic myelinated fibers in the upper dorsal white communicant rami. As there are no white rami in the cervical region, all pain sensation referred over the cervical sympathetic trunk must descend to the upper dorsal region before it can reach the spinal cord where these impulses overflow and stimulate the somatic sensory nerves, supplying the upper thorax, arms, and neck.

Pain referred to the left or right precordium and arm enters the cord only on the same side. The object in treatment is to destroy the poorly myelinated afferent sensory fibers from the heart which are passing through the sympathetic cords to enter a dorsal root ganglia. Alcoholic block of the rami communicantes is the equivalent of anatomic section. First employed by Swetlow in 1924, and his report in 1929 of forty-one cases following its successful use established it as a major therapeutic measure for the relief of angina pectoris.

Alcohol injection is difficult technically, because of the depth of the rami and the small area sclerosed by the alcohol. However, it is the safest method we have and its results are distinctly better than in cervical sympathectomy. According to White, 47.4% over 90% improved—an additional 26.3% over 50% improved—with 15.8% total failures. It should be used only in desperate cases, that is, those with persistent pain in whom all other medical measures have failed.

DISCUSSION

MAURICE C. HOWARD, M. D., (Omaha): Fellow Members: I have been especially interested in vascular spasm, due to the fact we see it so often. Yesterday afternoon we had the pleasure of listening to Dr. Bockus, who gave us a nice discussion dealing with spasm of the colon. This morning Dr. Connolly has talked upon spasm involving the larger blood vessels of the extremities.

I feel that the first thing we should attempt to do in dealing with these cases is to make a correct diagnosis. When Dr. Adson first began to perform his operation at the Mayo Clinic, it was repeated in a great many hospitals, and, of course, the results were never up to those of Dr. Adson. This was brought to the attention of Dr. Brown, who began to work on the problem from a diagnostic point of view in order that the surgeon would be able to pick out certain types of cases, and the results would be more in accordance with the work of Dr. Adson.

In making a diagnosis, there are two common methods which can be used. I feel the easiest method that you and I can use is the introduction of typhoid vaccine into the vein, watching our patient for the oral rise, and the rise in skin temperature of the affected extremities. If we obtain an increase in the index, as Dr. Connolly has well pointed out, then it may be possible that treatment will give the individual some relief from pain in the lower extremities, or in the upper extremities, if affected.

The second method is the blocking of the nerve along the diseased blood vessel. If this blocking is followed by a rise in skin temperature over the area supplied by this vessel, we may consider the symptoms in the affected extremities as being the result partly of spasm. Here, too, some form of therapy may be instituted.

I have three cases in mind which I am going to briefly relate. First is a woman of fifty-five, who had marked vascular spasm in one extremity. This pain had been present over a period of four years. I saw her in consultation, and advised a sympathectomy. Under the circumstances, this was refused and we compromised by stripping the femoral artery. The relief from pain was remarkable. For two months she had no sign of vascular spasm. The temperature of the extremity returned to normal, and we thought we had obtained a nice result. Since then the symptoms have returned, and the stripping of the femoral artery has not given us the therapeutic effect we desired.

The second patient was a fireman who had arthritis and flat feet. He was examined, and like a great many of these patients who come under observation, the question arose whether or not the flat feet were the cause of the pain. He was seen by an orthopedist, and this codition corrected to a certain extent, without results. He was referred to a surgeon, Dr. E. C. Henry, who stripped the left femoral artery, and all pain in this extremity disappeared. This was four years ago, and today he is driving a fire truck and free of all symptoms.

The third is a patient who not only has pain in the lower extremities, but also in the upper extremities, and what we used to call pseudo attacks of angina pectoris. Dr. Connolly saw her with me. She has been receiving injections of typhoid, and as far as her pain is concerned, she has had a very good result. I feel there has been some improvement with vaccine therapy.

However, we must go back to the original phase of the paper, and remember to attempt to make a proper diagnosis before instituting any form of therapy.

Z. N. KORTH, M. D., (Omaha): As has been brought out, both by Dr. Connolly in his paper and by Dr. Howard in his discussion, proper diagnosis is absolutely essential to the intelligent treatment of vascular diseases of the extremities. Sympathectomy must not be the treatment used in every case of Buerger's disease. We must remember that we have at hand medical treatment, which, after all, is the treatment of choice in the large majority of cases. It is true that a sympathectomy is of greatest value in those cases in which the active process has subsided, the progression has stopped, and the patient is suffering from the pain, trophic disturbances and other phenomenon associated with an obstructed vascular tree together with vaso-constriction in the extremities. When the time arrives for sympathetctomy the importance of determining the presence as well as the degree of vasoconstriction cannot be emphasized too greatly. Typhoid vaccine intervenously has been used to a great extent in the treatment of Buerger's disease because of its vasodilating effect on the peripheal vessels. It has been used also as a method of determining the degree of vasodilation when sympathectomy is contemplated. The method of injection of the posterior tibial nerve as explained by Dr. Connolly is not only less severe from the standpoint of the patient, but many times more accurate and should be used when possible in determining the suitability of the case for sympathectomy. General anesthesia or spinal anesthesia may also be used with equally accurate results. Not all cases of Buerger's disease have vaso-constriction; in fact about 60% do not. In those cases neither medical nor surgical treatment, other than amputation, can afford the patient very much hope.

In those cases in which there is vaso-constriction, only a selected group will respond with sufficient vasodilatation to warrant sympathectomy. Thus, then correct diagnosis, and correct interpretation of the findings is absolutely essential before any surgical procedure is attempted. A sympathectomy in Raynaud's disease gives beautiful results; in Buerger's disease, it gives results only in those cases which have been carefully selected because of satisfactory vasodilating response to the essential tests. To do a sympathectomy on a Buerger's disease without having definitely proven a sufficient degree of vasodilatation can be obtained, is submitting the patient unnecessarily and thoughtlessly to a very major and dangerous surgical procedure with the probability that, if the patient does survive, he will in spite of it, eventually need his amputation.

Sometimes a Buerger's involving, let us say, the lower extremities, shows a sufficient degree of vasodilatation in one extremity, and a border line or even very doubtful or meager response in the other. Even in face of this, occasionally sympathectomy is indicated as a means of saving one extremity as a useful member, and of obtaining sufficient vasodilatation in the other to permit amputation at a lower level. In such cases the patient should be advised completely beforehand of the possibilities and of what can be expected. Generally these patients are most eager to submit to the surgery because it promises some chance, however slight, for relief from the most severe suffering and pain.

DR. CONNOLLY, (closing): I wish to thank the gentlemen for their discussion.

Dr. Howard mentioned one case of Buerger's disease in which the adventitia of the femoral artery was stripped with a very good result. It is an extremely rare thing to obtain improvement that persists over two months. It has been definitely proven that this operation is anatomically and physiologically unsound, because the sympathetic fibers join the artery at various levels. If you expect to open vessels by abolishing vaso-constrictor fibers coming into the vessel, this is only possible by section of a sympathetic trunk, ganglionectomy, or complete remisection.

As to treatment with typhoid vaccine. In many cases the vascular insufficiency and pain is not severe enough to justify a sympathectomy, which is a major surgical procedure. In such cases the use of intravenous typhoid, in a large percentage of cases, improves circulation and relieves pain. Because of this relief, patients are willing to stand the discomfort which accompanies the introduction of typhoid vaccine.

PITFALLS IN ALLERGIC DIAGNOSIS*

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It has been stated many times that a chain is no stronger than its weakest link. This statement applies very closely to the problems of the physician in dealing with all conditions relating to allergy. To enumerate all of the pitfalls into which we may stumble in traveling the path of allergic diagnosis would require much more time and space than this paper will permit, but to point out some of the important stumbling blocks is its purpose.

As in other branches of medicine correct diagnosis is the first essential to successful treatment, and nothing can be more discouraging to both the physician and the patient than trying to relieve a condition mistaken for an allergic syndrome when the symptoms are due to something else. As frequently stated, in recent literature a good rule is to consider every case an non-allergic until proved otherwise.

The best safeguard against this mistake will be a complete and careful history, a thorough physical examination and the necessary biochemical. hematological and serological studies. At best some embarrassing mistakes will be made, but many can be thus avoided.

Black(1) illustrates this by a case which was sent to him for the diagnosis of a nasal allergy who was suffering from a syphilitic involvement of the nasal septum, anti-luetic treatment for which afforded the desired relief. Many other conditions such as acute colds, cardiac asthma, parasitic infestation of the bowel, cutaneous fungus infections and many other local or general infections, are mistaken for possible allergic conditions.

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In the past few years physicians' offices have been flooded with literature published by pharmaceutical houses telling of the relatively simple procedure by which one may find the exciting causes of allergic manifestations. This has led part of the laiety and medical profession to the belief that skin testing and other similar simple procedures promptly make the diagnosis or rule out allergic ills. This viewpoint cannot be too highly condemned. Many factors work together to make complicated the diagnosis of allergic conditions, and therefore too much dependence must not be placed on such simple procedures.

The first essential in correct diagnosis and successful treatment is a thorough understanding of the commonly accepted theories regarding the causes and mechanism of anaphylactic and allergic reactions. The second, is a thorough working knowledge of all known substances which may act as allergens, whether common or uncommon. The third, a knowledge of the conditions and allergens in the locality in which one lives and works, and perhaps not less important, the ability to read correctly the results of ones various tests and then to correlate the findings with the history of a given patient. Of equal importance we must mention the necessity of having potent extracts for testing purposes, the knowledge of action and dosage of various non-specific drugs used in allergic disease, especially in regard to personal idiocyncracies to them; and last but not least, one must be endowed with the detective ability of Sherlock Holmes and the patience of Job.

One who attempts this work should have in mind a thorough understanding, as far as the state of the art permits, of the mechanism underlying these reactions. True, there is a great lack of knowledge regarding the actual underlying cause of these manifestations, but acceptance of present theories gives one a basis for rationalization of his work, thus avoiding emperical methods.

A thorough working knowledge of all known substances which may act as allergens taxes a physician's resourcefulness to the utmost. These are almost without number and include practically all of the commoner substances which we come in contact with in everyday life. Also due to the complexity of our mode of living today many of the more uncommon substances have become common to us.

For simplicity we may divide these into three general classes.

1. Ingested types.
2. Inhalent types.
3. Contact types.

We must remember that two or three of these may work concurrently to cause the same condition or members of one type may cause symptoms in other ways. May I cite an example of a lady who had a marked sensitivity to orris root, as shown by skin testing. This is usually an inhalent or contact type but she was not effected in either way. Powder containing orris root caused her no cutaneous or nasal difficulty, but soon after placing lip stick upon her lips she was seized with violent gastric pain with an accompanying diarrhoea. Changing her lip stick to an orris root-free type gave her clinical relief. This then acted as an ingested type.

A lack of the thorough knowledge of the preparations and constituents of various foods leads to many failures. As an example of this. "Uncle Sam's Breakfast Food" contains flaxseed, and flaxseed is an occasional offender. This is doubly important because of the great variety of prepared foods on the market today.

By far the greatest variety of allergens may be classed under the "inhalent types." These include all substances fine enough to be carried in the air or breeze. The most common specific member being the pollens. They, of course, usually cause respiratory symptoms and are usually seasonal. This is not always true however as these pollens may settle during season in many places and be whipped up by breeze into the air at any time, causing symptoms. This is especially true in libraries around old books and frequently one sees a patient who states that they have a return of their symptoms out of season when coming in contact with such things.

We must also remember that pollen not only causes symptoms as an inhaled allergen but frequently is responsible for severe dermatitis when the pollen comes in contact with a susceptible skin.

The next most common group of inhalent allergens are the animal eminations. This is very important, not only because of contact with these animals, birds, etc., but because of the many and varied uses for these substances in our everyday life. Feather pillows are almost universal practice, although occasionally rabbit hair is used for this purpose, especially among Jews. There is practically no article of clothing or piece of upholstery that does not have one or more of these products in its makeup. Domestic pets exact their toll in this difficulty, and extermination of the cause is very difficult as hair and dander is left in rugs and upholstery and it is hard to entirely remove them.

Orris root is one of our most common offenders as it is widely used in perfumed powder, bath salts, rouge and other cosmetics and as a dry shampoo for the hair. It also causes occasional severe skin manifestations due to contact.

In the last few years much has been written on the importance of molds as allergic excitants⁽²⁾. These have almost a universal distribution and are very difficult to identify and classify. Study of the mold content of the air by exposing culture plates in the patient's immediate surroundings offers the best method of studying these cases. Mold growth in corn and wheat when stored, is of great importance to us here in Nebraska.

House dust is frequently mentioned by patients as a known excitant. This may of course contain many substances such as wool, animal eminations and fungus. The content of these dusts seems to vary in individual cases as judged by the difference in patient's reaction under different environments.

Many other inhalent substances have been reported; bees⁽³⁾, moths⁽⁴⁾ and butterflies, flies, bedbugs, human dandruff, glue (this being an occasional offender by ingestion after licking postage stamps, etc.), flaxseed and cottonseed⁽⁵⁾ (these being important because of their use in food and stock feed). In fact, one must be suspicious of any substance that the patient may have in his environment.

Under the group of contact allergens we may include any of the other types; dermatitis due to orris root, animal eminations, pollens and even food is frequent. Resinous substances from the leaves of many plants cause a great deal of trouble. I have in mind a nurse who developed a severe dermatitis on the back of the right hand every time she went on a case. After thorough study she was found sensitive to orange peel oil. A patch test of this substance placed on her arm for two hours left a red eczematous area which still can be seen after three months. Avoidance of orange peel has given her relief. Many other oily substances from other foods, meats and cereals, may cause dermatitis. Balyeat reports a case of sensitivity to lettuce leaf.

We must also mention here medications, such as salicylates, all alkaloids of opium, cinchona, and even ephedrine and epinephrine, which are used in treating allergic disease as not uncommon causes of allergic ills.

We must not fail to mention physical causes. This is accepted generally as a frequent cause of allergic manifestations. Not infrequently we see a patient who, upon entering a warm room after being out in the cold, will develop a fall in blood pressure, dyspnoea and syncope with edema and flushing of extremities or face. These patients usually obtain marked relief if they hold their hands under cold water or open the window and allow cold air to circulate through the room. The same condition may be caused by just the opposite, one heat, the other cold.

Kline, Cohn and Rudolph⁽⁶⁾ have studied the effect of histamine in allergic individuals and found it to be a non-specific allergen in all of these cases. This accounts for the many positive skin tests obtained for fish and meats. In preparing these extracts it is necessary to extract them immediately after death because if they are allowed to stand before doing so, large amounts of histamine is formed, which is carried over into the final extract. This also accounts for the occasional severe systemic reaction occasionally obtained after administering histamine for a fractional gastric analysis.

A knowledge of the environment and daily routine of an allergic patient is often necessary for a correct diagnosis. Study of all possible contacts is made difficult without knowledge of hourly occurrences. This is illustrated by a case of an office clerk who developed severe abdominal pain about ten o'clock every morning. On questioning she could give no light as to the possible cause of her trouble. She was then required to keep a diary of her daily routine and it was found that just prior to the onset of her pain she prepared all of the office's outgoing mail. She was tested for glue sensitivity and found positive.

This illustrates the importance of a correlation of a good history with the findings obtained by skin testing and other methods. One cannot be too thorough in this part of the diagnostic procedure if they are to succeed.

Much has been said about the dependability of skin reactions in allergic diagnosis. A general rule to follow is that the younger the individual the better the results. Two methods of skin testing are in general use; the intradermal in which a high dilution of the allergen is injected into the skin, the other the scratch test or some of its variation in which the outer layer of the skin is broken and fairly concentrated solution of the allergen are placed over this. The general opinion is that the intradermal is much the more accurate method although there are many more false positive reactions, and the danger of systemic reaction is greater. As a rule scratch testing is sufficient in younger individuals unless the skin is unduly coarse, and intradermal tests are necessary in the more advanced in age. One must remember that choice of methods and results of the tests are individual and vary a great deal with the patient. One cannot learn to read these reactions from a text book; experience is the only teacher.

When we study the prevalent methods of extracting food proteins we are led to wonder if this is not perhaps one reason for some error in skin testing. Methods vary; some extracting the water soluble (albumen), others saline soluble (globulen), and others the alkaline soluble (gluten), and some alcohol soluble (gliadin) fractions. Apparently very few contain all fractions. Would it not then seem reasonable that this may be one cause for inconsistant results obtained by the use of these extracts.

Because of this inconsistency Rowe, followed by others, prepared a series of elimination diets for the diagnosis of food allergies. Piness and Miller(7), in reviewing over 4,000 cases of allergy in which skin testing was done, these cases including over a half million individual food tests, sums up with the conclusion that in their judgment this method is far superior to other methods of diagnosis, and bases the present feeling as to the unreliability of skin testing to promiscuous testing of non-allergic individuals, the use of unreliable proteins, the lack of persistance and completeness in testing, inefficient methods of testing and failure to interpret reactions properly and correlate them with clinical history. He sums up his discussion of elimination diets with the following: "The cumbersomeness of the method is obvious, it is not only more time consuming than the most elaborate and prolonged skin testing program, but also subjects the patient to a prolonged period of dietetic juggling, which few have the desire or ability to carry out. It gives many practitioners a false sense of being armed with a reliable diagnostic and therapeutic instrument, and with its failure they are left unable to cope with the allergic problem. Because of the insidious destruction of their belief in efficacy of skin testing they are prone to lose their belief in the whole theory of allergy."

The best answer to the question of reliability of extracts that can be given is to make your own, and to have laboratory facilities with which you can arise to any emergency and prepare materials for testing in any individual case.

A knowledge of the action and possibility of personal idiocyncracies to drugs is of importance. Epinephrine is universally used as a symptomatic treatment in allergic disease, in fact, the response to this drug has been made a criterion as to whether a condition is allergic or not. Occasionally we find a patient who does not respond to epinephrine as he once did earlier in the course of his disease. The relationship of the rise in blood sugar after administration of epinephrine as an index to relief has been suggested by Stoesser(8).

It is not uncommon to see a report of allergic disease due to morphine as the primary allergen. This is especially true in asthma where morphine is given for relief of symptoms.

The advent of ephedrine and its general use has revealed many cases of idiosyncracy to this drug.

Many times we have seen the expression that "the better the detective the better the allergist." This cannot be better illustrated than by citing the following case.

A white male in his twenties had been bothered with severe dermatitis of his face, arms, back and legs and at times he would lose the hair on the back of his head. This was of several years duration; it was not strictly seasonal in character but it bothered him more in hot weather than at other times of the year. He gave no reaction to skin tests for any of the common or possible uncommon contacts, by the scratch method.

History of the case revealed one possible cause and that was a dog which had the run of the house and of which the patient was very fond. In hot weather when the patient was bothered the most by the skin irritation, he was in the habit of removing his shirt and lying on the floor which was carpeted and which of course was covered with small quantities of dog hair.

Because of this history and in the face of a negative scratch test for dog hair, a patch test composed of dog hair moistened with N/10 sodium hydroxide was performed. This gave a positive reaction, a small area of dermatitis appearing after twenty hours. Because of this the dog was sent away; the patient stayed out of the house most of the time and obtained complete clinical relief. After several weeks of relief the patient suddenly developed a severe reaction, more severe than for many months previously. The patient's daily routine was then studied which gave no history of possible contact with dog hair or other possible allergen. At this time the patient noticed some dog hair in the front seat of a truck he was driving. Due to this he watched the truck more closely and found that a stray neighborhood dog was sleeping in the seat of the truck at night. The truck window was closed at night and a thorough cleaning of the car seat has resulted in relief.

This illustrates the possibilities for which we must be on the lookout constantly, and also stresses the importance of a thorough explanation of the problem to the patient so they may help in the finding of a cause.

Patience is the watchword for both the patient and the doctor in dealing with allergic ills. One must be careful and not lead the patient to expect too much in a short time. We must not be discouraged when the diagnostic path is not straight. Persistance and patience will lead us to our goal.

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DISCUSSION

EDW. S. MALONEY, M. D. (Omaha): There is one point I should like to emphasize, and that is that allergy is not a matter of technique. Too many general practitioners have the idea allergy is something for a specialist to recognize. Possibly it is for a specialist to treat, but not for him alone to recognize. There are a lot of common symptoms due to common substances. Everybody does not react to only unusual things. They have allergic symptoms from common, everyday foods—oranges, meat, milk, eggs and bread. The general practitioner may easily question the patient and learn the offending foods.

One of the most helpful things in determining whether or not a patient is allergic is to inquire into what foods the patient dislikes. If a mother says to me, "Johnny won't eat spinach, or eggs," I have yet to fail to find he did not react to either. I am fully convinced that nature by causing us to dislike a food is trying to protect us from symptoms and it behooves us to follow her warning. It is an easy matter to inquire into a person's dietary habits. Why does one individual dislike cauliflower and the next person love it? It should be given more than passing thought. There are many foods people cannot eat because they cause symptoms. They will, however, eat food belonging to the same food group. He may not eat celery, yet he will eat carrots day in and day out. I know a number of people who cannot eat certain foods. One woman gets hives from eggs, yet she eats food containing eggs. It sounds simple to say that by taking eggs entirely out of her diet, the hives cleared. We can all recognize the possibility of allergy. There is not a symptom I know of that cannot be due to allergy. I am not overenthusiastic about this point. I had a patient in Colorado with symptoms referable to gastric ulcer that had persisted for four years. She was sensitive to milk, when she abstained from it, her ulcer cleared. There is nothing more definite when you find the cause. It is not a matter of salesmanship. If you find the cause, you can relieve the majority of cases of allergy.

THE KNOWLEDGE OF THE INTERNIST AS IT APPLIES TO THE SPECIALTIES*

HENRY FARRELL, M. D.,
McCook, Nebraska

I submit at the outset that to be successful in any one of the numerous specialties, and I think more especially the eye, ear, nose and throat, one must have a general knowledge and good understanding of practically the whole field of medicine. It is to be assumed that physicians in every branch of medicine, including the specialties, are primarily interested in diagnosis and causation. Since the cause of disease is frequently of an infectious nature, I want to address you on the principles and clinical application of serum diagnosis and serum therapy, hematology and blood dyscrasias as they relate to the eye, ear, nose and throat.

Certain ocular diseases have long been known to be local or focal manifestations of systemic disorders of which the commonest are: Phylyctenular conjunctivitis or keratitis, iritis, choked disc, optic atrophy, anemias, hemorrhages into the retina, as well as middle ear infections, anginas, and nasal pathology.

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*Read before the Southwestern Nebraska Medical Society, McCook, Nebraska, April 3, 1933.

Too often the general physician regards the eye as a more or less isolated organ subject to its own peculiar disease with a limited local pathology. This, I believe, is a mistake. Various visual defects, ophthalmoscopic appearances, different types of hemianopsia, abnormal changes in the visual field, are all of inestimable value in the detection of systemic disorders, establishing diagnosis, indictating treatment, and prognosis.

It is not my purpose to dwell at length on the hematology and blood dyscrasias but to touch upon the principles and clinical application of serum diagnosis and serum therapy.

I propose to speak briefly of the important underlying principles of serum hemolysis and complement-fixation since a good working knowledge of them is essential for the proper conduct in the principles of technique and also of help to the clinician for the proper interpretation of reactions. I shall touch lightly and devote some account to the sensitiveness, specificity, and practical applications of the methods in the serum diagnosis and treatment of syphilis, tuberculosis, gonorrhea, and a number of the well-known communicable diseases of human beings.

There is a wave of popular enthusiasm among the lay population and to some extent among the profession in reference to indications and therapy of the serums. And just as a preliminary I want to say a few words about immunity. What I mean by immunity is the ability of an organism to resist infection or successfully antagonize the invasive power of parasites, or to annul the injurious properties of their products. Thus we may have a natural immunity with an inherited resistance against infection; an acquired immunity which is variable in degree and duration—like the active, acquired immunity through infection or vaccination. Right here I want to pause for a moment on the efficacy of vaccination—especially the vaccination of smallpox. All persons that have been vaccinated may not have had vaccinia, the essential thing leading up to immunity. Nor does the occurrence of a local lesion account as a guaranty that vacinia has been produced. An arm may be made sore, may even suppurate, but it is the disease vaccinia that must occur, three days incubation, three days vesiculation and subsequent cicatrization with the formation of a punctate scar.

Then we have an immunity acquired by intoxication known as bacteria toxins. Some are enzymes, some are toxalbumins, some are bacteria proteins. It is through their physiologic action and behavior toward the body cells which, when introduced into living organisms, produce definite, but not necessarily visible, reactions. Such reactions are known as antigenic and the substances by which they are induced are called antigens. An antigen is any substance which, when injected into a living organism, is capable of producing a chemico-physiologic reaction resulting in the appearance of a neutralizing, precipitating, agglutinating, dissolving, or otherwise antagonizing substance known as an antibody. The antigens are, so far as is known, all colloidal substances. They may be harmful or harmless, active or inert, living or dead, organized or unorganized. The reactions are specific and the antibody has specific affinity for that antigen alone by which formation has been excited. Further, we have what is known as passive acquired immunity. Passive immunity is always acquired, never natural. It depends upon defensive factors not originating in the animal protected, but artificially or experimentally supplied to it. The fundamental principle is simple and has become the basis of serum therapeutics. If the immunized animal generates factors by which the infecting bacteria cannot be destroyed or the activity of their products overcome in its body; cannot these factors be removed and the benefit they confer transferred to another animal?

Thus it was with Behring almost forty years ago who found that the blood serum of animals immunized against diphtheria and tetanus, when mixed with cultures of these respective bacilli, neutralized their power to produce disease. Kitosato found that if mice were inoculated with tetanus bacilli, they could be saved from the fatal infection by the intra-abdominal injection of some blood-serum from a mouse immunized against tetanus even after symptoms of the disease appeared. Thus it is shown that in every case in which defensive reactions are stimulated in experiment animals, the reactions are accompanied by the appearance in the blood-serum of those animals or factors that can be utilized to defend other animals in whose bodies no similar reactions have taken place.

This brings me to a very important contribution made by Ehrlich in 1891 in his work on the vegetable toxalbumins, ricin, abrin, and rabin, that were found to be antigens capable of producing anti-ricin, anti-abrin, and anti-rabin, respectively, each antibody being capable of neutralizing the effect of its specific antigen. Meyers in 1900 found that the repeated intra-peritoneal injection of egg-albumin into rabbits caused their serum to give a dense precipitate when added to solutions of egg-albumin.

All of these reactions are indirect and intermediate and may be either cytotoxic, hemolytic, or bacteriolytic. The reaction which, when repeated, may lead to immunity and the formation of antibodies seem to be followed by constitutional disturbances much more profound than would be supposed from the apparent freedom from symptoms manifested by the animal. As early as 1839 Magendie observed that if a rabbit was given an injection of albumin and then some days later a second injection, it was made very ill and might die. About 1900 Mattson, working in the laboratory of McFarland, observed that when guinea pigs, used for testing anti-toxic serum, were subsequently injected with another dose of serum, they commonly died. It remained for Portier and Richet to first realize the importance of this condition and to this increase of sensitivity to the poison brought about by the initial dose they gave the name anaphylaxis (negative protection, destroying protection or breaking down the defense).

In 1905 von Pirquet and Schick pointed out that in a certain proportion of cases the injection of horse serum in man is followed by urticarial eruptions, joint-pains, fever, swelling of the lymph nodes, edema, and albuminuria; these symptoms usually appear after an incubation period of eight to thirteen days and constitute what they called "serum disease" Allergia (other; energy). Sometimes these reactions are immediate, sometimes death is imminent and, as has been observed, death sometimes occurs. Here it may be well to have in mind the definition of Allergia. It may be said to be a form of acquired immunity in which a person reinfected reacts differently from the way he acted after the primary infection. McFarland says that experimental study shows that when an animal is injected with an alien protein of any kind, a reaction takes place that usually is not completed under six days. If a second injection is given before the reaction is perfected, the mechanism of immunity is set in action and the animal proceeds to defend itself through the various means described. If the second administration be deferred, however, until the first reaction is completed, it seems to find the animal in a state of disturbed biologic equilibrium, the nature of which is not understood but which is characterized by a profound disturbance that may terminate in death. The reaction is quite specific; the sensitization, once affected, may continue throughout the remainder of the life of the animal and be transmitted from the mother to her offspring through her blood. The reaction can be brought about by feeding the protein or injecting it. It has important bearing upon infection and immunity, the chief example being seen in the tubercular reaction.

Anaphylaxis is not a disturbance of the cells of the body as some have thought but is, at least in part, a disturbance of the composition of the blood as can be shown by the occurrence of what is known as passive anaphylaxis. If the blood serum of a sensitized animal be withdrawn and injected into a normal animal of the same kind, it carries the sensitization with it. . The new animal, however, does not become sensitized at once, but only after some days. Hence, it is equally true that the disturbance is not wholly in the blood else why should not the sensitization be immediately present upon injection of the serum? Anaphylaxis may, furthermore, be local. Thus, when certain substances like tuberculin are dropped in the eye, there is no effect, but when a second application is made after some weeks, the eye may be reddened. Anaphylaxis may play a role in infection. In cases where an attack or an infectious disease leaves no immunity, the body may be left hypersensitive to subsequent attack. The diseases commonly thought to be allergic in origin are hay-fever, hives, poison oak, asthma, angio-neurotic oedema, certain skin eruptions, infantile convulsions, and certain cases of migraine.

Before going on with the discussion of serum therapeutics, I want to take up briefly the principles of hemolysis. Serum hemolysis has been so designated because the two substances bringing it about are to be found in the plasma or serum of the blood. One of these substances is of the nature of a specific antibody which unites with the erythrocytes and prepares or sensitizes them to the dissolving or lytic effect of the second non-specific substance. It is known as amboceptor or hemlysin and is the specific antibody. The second or non-specific is called "alexin" by some and by Ehrlich, the "complement". The complement may be defined as a substance present in both normal and immune sera which produce lysis or sensitized antigen. The phenomenon of complement-fixation is interesting. The test may be used for clinical as well as medico-legal purposes. For example, one may immunize a rabbit with human blood and thereby produce anti-human serum containing a known antibody. The serum may be added to complement and an extract of blood from unknown source; under suitable technical conditions a positive reaction shows that the blood was of human origin. Or if a sausage was suspected of containing dog flesh, an extract may be employed with known anti-dog serum and under suitable conditions the adulterations thereby detected. Referring to the presence of some substances produced by the action of spirochoeta pallida upon tissue cells, the role of the antibody in the mechanism of the specific complement-fixation is the basis in the so-called Wassermann reaction. The sensitiveness of the Kolmer complement-fixation test in gonococcus diseases serves a very useful purpose under well defined conditions; positive reactions occurring in approximately 90 per cent of cases in gonococcus iritis, arthritis, and endocarditis. When technical errors can be eliminated, the tuberculosis complement-fixation test with positive reactions are of distinct diagnostic aid.

Now, in conclusion, I shall briefly summarize the progress of serum therapeutics in reference to the communicable diseases.

SCARLET FEVER

The recognized treatment of severe or moderately severe, cases of scarlet fever is the injection intramuscularly of 10 cc of concentrated scarletinal antitoxic serum. It must be remembered that to obtain good results the adminstration of antitoxin in scarlet fever must be prompt and as early as possible. Not much is to be derived after a septic process has once been established. Scarlet fever convalescent serum is indicated in every case of scarlet fever in the first days of illness if severe toxic symtoms appear. It is of special service if severe intoxication of the central nervous system is apparent. It acts as a circulatory stimulant with disappearance ot cynanosis. The serum does not protect against sequelae, such as rheumatism or nephritis nor against streptococcus complications. The toxin for active immunization contains no serum, and anaphylaxis from serum plays no part.

MEASLES

We have an anti-measles diplococcus serum which is a specific immune serum brought about by introduction in the horse of the green producing measles diplococcus of Tunicliff. Administered to children previously exposed to measles infection, it apparently gave complete protection in a few cases, incomplete in some, and no protection in others. Buttorff has made use of convalescent whole blood in a number of cases with gratifying results, injecting 3 to 12 cc intramuscularly depending on the age of the child.

DIPHTHERIA

In reference to diphtheria, it is of interest to note the work done by Hektoen and Johnson at the Durant hospital at the John McCormick Institute for Infectious Diseases before and after the Schick test. Of 140 originally insusceptible student nurses entering the hospital, not one developed diphtheria; that of a 159 susceptible nurses immunized to negative Schick test before entering service, only one developed diphtheria. At the same hospital it is noteworthy to show the incidents of scarlet-fever in the student nurses before and after the introduction of the Dick test and the preventive injection of scarlet toxin. Of 132 student nurses who entered the hospital as originally insusceptible, no one developed scarlet fever; that of 59 susceptible nurses immunized to negative Dick test before entering on duty, all escaped scarlet fever; that while the percentage of scarlet fever among nurses at the period before the introduction of the Dick test was 7.7. the percentage for the period after the use was 1.1; and finally that the number of cases of sore throats since the use of the Dick test and the immunization of susceptible nurses is less than before.

Speaking of the anginas, may I refer here to the recent work of Litchenberg determining the pathogenicity of fusiform bacillus and spirillum, known as the Plaut-Vincent organism. For years we have been lead to believe that these organisms had a pathologic relationship to a variety of distinct clinical entities due to the presence of the spirillum of Vincent and fusiform bacillus. Briefly he tells us these organisms are found in practically every normal mouth, about spongy gums, pyorrhea alveolaris, ulcerated stomatitis, angina, tonsilitis. diphtheria, scarlet fever, and syphilitic ulcerations of the mouth. It seems improbable that these organisms play the determining role in the causation of all these conditions. But it does seem probable that they are merely saprophytic and opportunists growing on lesions caused by other agents and only rarely, if ever, become pathogenic. Most likely the real cause of these local and infectious diseases is one of the "57 varieties" of streptococcus.

POLIOMYELITIS

In actue poliomyelitis the most outstanding treatment has been the use of convalescent human serum. Also the use of the serum prepared by Dr. Rosenow. With this latter Adler had the experience of a fairly high percentage of serum reactions.

MENINGITIS

Improved methods of spinal drainage and administration of anti-meningococcus serum are the chief advances made in the treatment of meningitis. One case reported by Kremmer received over a period of 22 days, 6 spinal, 1 ventricular, and 9 cisternal injections of anti-meningococcus serum with perfect recovery.

ERYSIPELAS ANTITOXIN

There is a valuable preparation on the market at the present time known as erysipelas streptococcus squibb. This product is supplied in concentrated form only and dispensed in syringes containing one average "therapeutic dose." Erysipelas antitoxin in adequate dosage, quickly relieves toxic depression, reduces the temperature, pulse, and respiratory rate, dispels the rash, promotes absorption of the edema, reduces the period of disability with a consequent reduction of contagion and a saving of bed linen as well.

LOBAR PNEUMONIA

The serum which has particularly engaged the attention of the medical world during the past three years is the specific treatment of lobar pneumonia with a concentrated antipneumococcus serum prepared by the method of Felton. Strictly speaking, it is not an antitoxin but, according to Cecil, is an antibacterial serum given intravenously in the hope of helping nature overcome the pneumococci in the blood. It is highly potent and polyvalent and given in doses from 10 to 20 cc by the venous route. It is strikingly and immediately beneficial in types I and II. In the type III and type IV groups, very little effect was seen as far as therapeutic effect was concerned, this being especially true in type III.

ADENO-FIBROMA MALE BREAST

MAX EMMERT, M. D.,
Omaha, Nebraska

H. W., aged 51, a broker by trade, was seen 12-30-19, because of a lump in his breast.

P. H. Of no interest except that he was struck in the left breast by the edge of a door one year ago.

P. I. Four months ago his attention was attracted to the breast by soreness in the nipple and he discovered a hard lump in the breast. The soreness is periodical without radiation. There is also a sensation of burning in the nipple region. There has been no appreciable increase in size of the mass.

Exam. Head O.K. Heart sounds rather faint, B.P. 150/130. Abdomen, rectum and urine negative. Left breast slightly larger than right. Beneath the nipple is a mass the size of a hickory nut, which is firm and apparently merges with the surrounding tissue. The over-lying skin is slightly adherent. The mass is freely movable over the underlying tissue. Painless axillary glands the size of a bean which are rather firm. Blood examination—"Serum of the blood of Mr. W. gave a slight inhibition of hemolysis, what we designate as plus minus."

Operation—1-14-20. Radical removal of the breast and axillary glands and fat.

Pathological report. "The examination of the tumor shows it to consist of glandular structures and connective tissue stroma. The glands show proliferative changes, the lumina of some of them being filled with epithelial cells. The glands are regular in outline and do not invade the underlying tissue. The stroma is rich in connective tissue and round cell infiltration. The axillary glands show some endothelial hyperplasia. No other pathological changes noted.

Diagnosis. Adeno-Fibroma.

COMMENT

Because of the rudimentary structure of the male breast it is less liable to neoplastic changes than the female. Carcinoma is the most frequent neoplasm found in the male breast. In the light of our present day knowledge of the relationship between malignancy and biopsy the radical procedure in this case was not justified. A similar condition at this time would necessitate simply an excision of the tumor for examination or simple amputation of the breast, with radical procedure reserved for more conclusive evidence of malignancy.

TUBERCULOSIS ABSTRACTS

A symposium on silicosis contributed by a group of distinguished clinicians and research workers occupied a prominent place on the program of the annual meeting of the National Tuberculosis Association held in Toronto, June 27-30, 1933. Extracts of the papers, which will be published elsewhere later, are here presented.

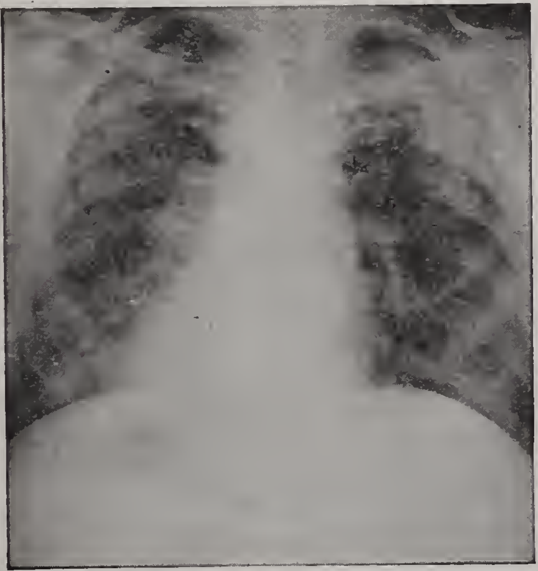
SILICOSIS AND TUBERCULOSIS

A. J. Lanza, specialist in industrial medicine, stated that while it is impossible to estimate accurately the prevalence of silicosis in the general population, studies among employees of trades with a silicotic dust hazard show a high tuberculosis mortality among them. Much of this excess in the tuberculosis death rate may be ascribed to silicosis. In a few instances the prevalence of silicosis has been carefully estimated, but the rates so obtained cannot be applied generally because industrial conditions vary so widely. However, it is apparent that silicosis is a widespread industrial hazard, is probably on the increase, and affects to an appreciable extent the death rate among industrial workers exposed.

Professor S. Lyle Cummins of Wales, Adviser to the (British) Tuberculosis Research Committee, which recently issued an epochal report on tuberculosis among South African natives engaged in gold mining, stated that there are serious lacunae in our knowledge about dust diseases. "Silicosis" is a state of bilateral lung and lymph-node fibrosis, for the most part nodular in type, resulting from the inhalation and the retention in the lung of the dust of hard stone; the particles being in such fine division as to enter the pulmonary alveoli and ultimately the lung tissue where they set up characteristic changes and determine an increased liability to pulmonary tuberculosis. We know, too, from the animal experiments of reliable investigators, that free silica introduced into the tissues, either in its crystalline form or as a solution, sets up inflammatory processes leading on to fibrosis; and that its presence acts as an adjuvant to the local multiplication of tubercle bacilli.

In South Wales coal miners suffer with a condition corresponding to the silicosis of metalliferous miners, but which does not apparently predispose to fatal lung tuberculosis. These observations question the criteria on which the diagnosis of silicosis is usually made. Studies among gold miners in South Africa provide much accurate information. The dust inhaled by miners on the Rand contains other elements than free silica. Some of the elements of these complex dusts may be adjuvants to the action of free silica and others may tend to neutralize it. We need, said Dr. Cummins, a scientific "recessional" in which to reexamine with an open mind many of the generalizations now accepted as current coin in relation to silicosis and "miners" phthisis.

Pulmonary tuberculosis so readily complicates simple silicosis, said A. R. Riddell of Toronto, that silicotic fibrosis rarely reaches advanced stages without its occurrence. Simple silicosis seldom occasions conscious disability unless the fibrosis is advanced.



Second degree silicosis with tuberculosis. Hilum shadows obscure. Dense mottling in both lungs. Some cloudiness at both apices, particularly at right.

Clinical signs in silicosis are those common to fibrosing lung conditions and therefore not characteristic except that they generally occur throughout the chest and are not confined to circumscribed areas. A lessening of the breath sounds or blanketing together with a shortening of the inspiratory phase, which is at the same time raised in pitch, has diagnostic value. X-ray shadows, when considered in conjunction with a clear history of exposure, are diagnostic.

The teaching that tuberculosis arising among those in silica trades is not infectious cannot be universally entertained. The author has found as great an amount of infection among the wives and children of tuberculous silicotics as among those in contact with ordinary tuberculosis.

Leroy U. Gardiner of Saranac presented a picture of the pathological sequence following inhalation of silica dust. Autopsy material in this country is rare, but this lack is compensated to some degree by the fact that silicotic conditions can be reproduced in experimental animals.

The first reaction to inhaled silica is non-specific and is probably the same for any type of dust. It consists of accumulations of phagocytes in the subpleural air spaces accompanied by a slight thickening of their walls. By X-ray this may be visualized as a slight diffuse haze beneath the pleura in the mid-portions of the lungs.

Phagocytes carry the silica to lymphoid tissue within the lung and the mediastinum where nodules of fibrous tissue develop which compress the lymphatic vessels and interfere with the flow of lymph. Phagocytes pass through the walls of the lymphatics and excite fibrosis in the areolar tissue about them. In the roentgenogram the thickened vascular trunks, beaded by minute nodules of specific reaction, are now cearly discernable. Nodules in the tracheobronchial nodes enlarge these structures and widen the mediastinal shadow.

When lymphatic obstruction is advanced phagocytes carry dust immediately into all parts of the pulmonary frame-work with the formation of a diffuse fibrosis and multiple nodules in the walls of the terminal air spaces. The roentgenogram discloses great numbers of discrete nodules uniformly scattered throughout the lung, which are easily visible because surrounded by compensatory emphysema.

Acute silicosis is said to developed in response to excessive concentrations of exceedingly fine dust. Sections of all those seen by the author have been complicated by tuberculosis but the simple form may occur.

When tuberculosis complicates silicosis it may arise from a pre-existing latent infection or from a new one acquired during occupational life. It becomes more common as the amount of silicosis increases. The combination of the two conditions constitutes a new disease entity which is characterized by lesions different from those which either irritant produces alone. In the presence of tuberculosis the silicotic nodule increases in size and its borders become ill-defined and irregular. Its center may caseate but often it does not. Tubercle bacilli are rare or absent. Conglomerations of nodules imbedded in a matrix of dense pigmented leather-like scar tissue are common in the mid lungs and are frequently bilateral. Foci of caseation or even cavities may occur within such areas. Such changes are demonstrable both by roentgenogram and postmortem sections. The cause of the susceptibility of the silicotic lung to tuberculosis remains to be demonstrated although various experimental data have shed some light upon the character of the process.

Willis S. Lemon and George M. Higgins of Rochester, Minnesota, described the development of the pulmonary silicotic nodule in the experimental animal. The amount and the situation of lymphatic tissue determine not only the site but the physical characteristics of the developing lesions. They become massive and conglomerate in the progressively smaller and, more discrete as the sizes of the bronchi decrease. Lesions of variable size occur in the subpleural regions.

Henry K. Pancoast and Eugene P. Pendergrass of Philadelphia described the roentgenological aspects of this subject. The roentgen examination is the most exact means of determining the presence of silicosis, the degree of progression and the differential diagnosis.

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A BIT OF EARLY DAY NEBRASKA MEDICAL HISTORY AND ROMANCE

In September, 1819, the Sixth United States Infantry came up the Missouri river in the first steamboat ever to make the trip and established Fort Atkinson, near the present site of the village of Fort Calhoun, primarily as an outpost to protect the Major Long Expedition of 1820 to discover the source of the Platte river in the Rocky Mountains.

Accompanying the regiment were Surgeon John Gale and Surgeon Thomas W. Mowrer. Food supplies during the winter being limited to salt meats, flour, Indian corn meal and other non-vitamine bearing foods, wild game being unbelievably scarce and practically unobtainable, scurvy broke out late in winter and of the 788 soldiers then in camp, 560 contracted scurvy and 157 died before early-spring wild vegetables, of which the wild onion (allium) the size of a hazelnut is said to have been one, were obtainable and a herd of cattle furnishing fresh meat, milk and butter was driven in from Fort Osage on the south, early in April, 1820.

The reports of surgeons Gale and Mowrer on the epidemic are well written and show a keen grasp of the desperate conditions that confronted them. Surgeon Gale furnishes us with a bit of social history of great interest which must here find place.

He became enamoured with the Indian princess Ni-Ku-Mi (or Ne-Co-Mi), daughter of the chief of the Ioways, married her and she bore him a daughter who was named Mary. After several years, so a story runs, Surgeon Gale left the fort for service elsewhere and wanted to abandon his squaw-wife, but wished to take the daughter Mary, with him. Ni-Ku-Mi, with the child, took to the woods along the Missouri where she remained in hiding until Surgeon Gale had taken the steamboat down river. He was transferred to Jefferson Barracks, later served at Fort Leavenworth and died at Fort Armstrong (Rock Island, Ill.), July 27, 1830. His record as an army surgeon is of the very best.

Mary grew to womanhood and married Joseph La Flesche, half breed chief of the Omahas and to this union was born a large family of children of whom two daughters and a son were to become famous. One, the younger, Susan La Flesche, was educated in the east, entered Woman's Medical College. Philadelphia, and was graduated therefrom with honors, the only Indian woman ever to have graduated from a medical school, so it is said.

She became tribal physician for the Omaha Indians, then about 1300 in number, married a French-Sioux Indian named Henry Picotte, interested herself in the social and physical welfare of her tribe, became their recognized leader, succeeded in raising money to build a hospital for her people at Walthill, Nebr., named after her, the "Susan La Flesche hospital," became interested in, and allied with, organized medicine and died in her forties, September 18, 1915.

OMAHA MID-WEST CLINICAL ASSEMBLY, OCTOBER 30-NOVEMBER 3

The Omaha Mid-West Clinical Society organized last spring will put on their first Assembly October 30-November 3, at Omaha.

It is thought that Omaha, in common with many other metropolitan cities, has the talent and the material and should foster postgraduate study in this area.

In the tentative program at hand one is at once struck with the array of talent promised for the meeting. In addition to about fifteen guest speakers the local profession will present fifty-two lectures during the meeting.

There will be lunches and dinners at moderate rates at which guest speakers will discuss problems of the profession.

The last day will be a Hospital Day, consisting of wet clinics, ward walks, radiologic and pathologic demonstrations, etc.

There will be a Scientific Exhibit to which the American Medical Association, the Surgeon General's Office and Universities will contribute.

This meeting will interest the entire profession of Nebraska and surrounding states and a large attendance is expected.

THE ST. LOUIS EPIDEMIC OF LETHARGIC ENCEPHALITIS

Disquieting news has come from St. Louis where an epidemic of encaphalitis had claimed some eight hundred victims and resulted in some one hundred and fifty deaths up to the time this item was written. Sporadic cases are occurring elsewhere and when reported in connection with the St. Louis epidemic, strike terror in the minds of many, who fear a pandemic. It is proper to say that encephalitis has occurred sporadically over the entire country for years and the isolated cases now being reported probably have no relation to the epidemic now prevailing in St. Louis. Late reports indicated a waning of the epidemic.

Public Health Director Bartholomew has issued a bulletin on the matter from which we gather the following:

On the basis of past records, persons past 35 years of age appear most succeptible to the disease and that age group has a 30 per cent mortality average, considerably higher than in the case of younger patients. The higher incidence of the disease in the older patients is not like that in ordinary encephalitis.

Incubation periods of the disease are uncertain. The onset is usually quite sudden, covering not more than from one to three days.

The bulletin gives a number of symptom facts by which doctors may recognize the disease. The fist and most pronounced symptom is a moderately stiff neck with headache, pains in the abdomen and legs, tremor and commonly catatonic semi-rigidity. There is often gastro-intestinal disturbance with vomiting, constipation or diarrhea. There is also usually evidence of mental involvement with immobile facial expression, stupor, coma or "sleepiness." Tendon reflexes tend to be sluggish or entirely absent and vary from day to day.

The duration of what is termed the febrile stage is irregular. The temperature may return to normal within a few days.

REPORTS OF DISCUSSIONS

Complaint comes to this office about the stenographer's reports of discussions at annual meetings. This is a serious matter and there are several contributing factors that should be remembered before condemning the stenographer.

The acoustics of assembly rooms are sometimes abominable, precluding correct audition.

Some discussants get as far away from the stenographer as possible and some even turn away from her when she is endeavoring to take the discussion.

Some discussants make no effort to talk plainly so as to be heard by the assembly or by the stenographer.

The remedy suggested is that all discussants stand close to the reporter and talk, toward, rather than away from her, and endeavor to enunciate clearly.

PHYSICIANS AND THE NRA

The following statement is made for the information and guidance of physicians. It is based on the most recent, accurate information that the association has as yet been able to obtain:

1. The National Industrial Recovery Act and the President's Reemployment Agreement do not cover legally the practice of medicine. A practitioner of medicine is not within the purview of the act or of the agreement unless his practice is an integral part of a trade or industry. He incurs no legal liability if he refrains from signing the agreement. All this, however, should not prevent any physician from signing the agreement if he desires and if he can do so consistently with the purpose and spirit of the National Industrial Recovery Act.

2. Before signing the President's Reemployment Agreement, a physician should determine whether his doing so and displaying the Blue Eagle may not tend to discriminate against his less prosperous professional associates. The elimination of unfair competition is one of the basic purposes of the National Industrial Recovery Act. The President himself has no authority to approve a code or to enter into an agreement that will eliminate, oppress or discriminate against small enterprises. Certainly, then, no one has the right to utilize the President's Reemployment Agreement as the means for unfairly getting the better of a competitor. The financially successful physician who thinks of signing the agreement should therefore bear in mind that if

he displays the Blue Eagle he may seem to be bidding for the patronage of every person who has signed the President's Reemployment Agreement or the Consumer's Agreement, and that this will include a bid for the patronage of the patients of the less prosperous physicians in the community, who because of financial considerations cannot practice under the terms of the Reemployment Agreement. Every patient who has subscribed to either of the agreements named, it should be borne in mind, is bound by a solemn obligation to patronize physicians who have signed it. A physician who desires to subject himself to the President's Reemployment Agreement may seek the advice of his county medical society before he commits himself. The society can advise him whether the signing of the agreement and the display of the Blue Eagle by one or more physicians in the community will tend to eliminate, oppress and discriminate against others, contrary to the principles of the National Industrial Recovery Act.

3. Every county medical society may well, either with or without a request for advice from some individual physician, determine whether the requirements of the President's Reemployment Agreement are such that every physician in the community can practice under it without undue hardship. If the society finds that that is the case, the forbidden element of unfair competition and the oppression of weak competitors can hardly be said to enter into the situation, and every physician may be left to decide for himself whether he will or will not practice under the agreement. If, on the other hand, the society finds that some physicians, because of conditions beyond their control, cannot without undue hardship subject themselves to the requirements of the agreement, the society can then determine whether the agreement is susceptible of modifications that will make it possible for every physician in the community to submit to its terms. If the agreement is susceptible of being so modified, the society can submit to the National Recovery Administration a petition for such modification. The agreement itself recognizes that modifications may be necessary and provides a rather one-sided way for bringing them about in order to avoid hardship in individual cases. There is no reason, however, why by a somewhat similar procedure the agreement should not be modified to meet the needs of the medical profession of a county. If the agreement is so modified, the element of the elimination, oppression, discrimination and unfairness against weaker competitors will have been removed and it may be left for each physician to choose his own course.

4. To avoid future disappointment, it must be recognized that the law does not provide for the punishment of a physician who signs the President's Reemployment Agreement and then cheats. It is understood, however, that the National Recovery Administration has in mind the setting up of machinery whereby persons who have obtained the Blue Eagle and who cheat under it will be held up to public odium through action compelling the surrender of the official insignia. County medical societies that approve the President's Reemployment Agreement in its original or in any modified form may well consider how they can best cooperate with the National Recovery Administration in any efforts that may be made to enforce honest compliance with its terms by all practitioners who sign it, whether members of the society or not.

5. A physician who employs no one can subject himself to the requirements of the President's Reemployment Agreement if he so desires and thus obtain the right to display the Blue Eagle. A physician without employees obligates himself by signing the agreement to hire in accordance with the terms of the agreement such employees, if any, as he may engage during the life of the agreement; that is, until Dec. 31, 1933. Whether a physician has more than two employees in his service, or has none at all, is immaterial as far as the privilege of signing the agreement and obtaining the Blue Eagle are concerned.

6. Hospitals are not within the purview of the National Industrial Recovery Act or of the President's Reemployment Agreement unless they are integral parts of a trade or industry. (*J. A. M. A.*, Sept. 16).

LONG LOST MEDICAL SOCIETY MINUTES FOUND

Northwestern University Medical School
Chicago, Illinois,
September 8, 1933.

Dear Doctor Long:

In some material which we recently purchased for our library I find a manuscript of the transactions of the third annual session of the Nebraska State Medical Society that was held in Lincoln, Nebraska, on July 6, 1871. Insofar as I know, this is the first record that has been discovered of the proceedings of this meeting.

Some years ago I secured from the late Dr. Richard Moore of Omaha (who by the way was a graduate of Northwestern University Medical School) perfect copies of the early transactions of the Nebraska State Medical Society. My recollection is that this set contains a note to the effect that the transactions of the third annual session were never published. If this proves to be true, the manuscript which I have is of the greatest value and I wonder if it ought not to be published in *The Nebraska State Medical Journal* in order to make the series complete?

Sincerely yours,
IRVING S. CUTTER, M. D.,
Dean.

ISC:R

Proceedings of The Nebraska State Medical Society

At Its Third Session, June 6th, 1871, 2 P. M.

Lincoln, Nebr.
June 6th, 1871.
University Chapel.

The Nebraska State Medical Society met at 2 o'clock p. m., 3rd anniversary convention, the president, N. B. Larsh, in the chair.

Meeting opened with prayer by Rev. Mr. Peck.

The permanent secretary, Dr. S. D. Mercer, being absent, Dr. V. H. Coffman was appointed temporarily.

Members and delegates were requested to register (Page 81-2) and file certificates of membership with committee of arrangements.

On motion of Dr. Fuller the society adjourned a few minutes to give time for committee on credentials to report.

After recess the committee reported the following gentlemen entitled to seats in the convention:

N. B. Larsh	Nebraska City
F. Renner	Nebraska City
W. H. Hess	Nebraska City
D. W. Hershey	Nebraska City
John Black	Plattsmouth
R. R. Livingston	Plattsmouth
V. H. Coffman	Omaha
Geo. Tilden	Omaha
James H. Peabody	Omaha
L. H. Robbins	Lincoln
D. W. Tingley	Lincoln
F. G. Fuller	Lincoln
A. Bowen	Nebraska City

Delegate Members

J. M. Strickland	Lan. Co. Med. Soc.
E. Van Buren	Permanent Mem.
E. M. Whitten	Nebr. City
J. M. Northrop	Lan. Co. Med. Soc.
W. D. Gilbert	Lan. Co. Med. Soc.

Calling roll was dispensed with.

The following officers were elected for ensuing year:

R. R. Livingston	President
A. Bowen	1st Vice President
V. H. Coffman	2nd Vice President
Geo. Tilden	Corresponding Sec.
D. W. Hershey	Treasurer

Representatives to American Medical Society in 1872: J. M. Strickland, W. H. Hess, E. Van Buren and L. H. Robbins. Alternates: L. J. Abbott, C. C. Radmore, S. D. Mercer and E. M. Whitten.

Rules No. 5 and 6 were suspended on address of retiring president and inauguration deferred on motion. Reading of minutes of previous meeting was suspended.

Standing committee reported as follows:

Com. on arrangements	Verbal
Com. on ways and means	Verbal
Com. on foreign correspondence	Verbal

Com. on publication, as follows:

Report of committee on publication:

Two hundred copies of the proceedings of the 2nd anniversary of forty-eight pages each have been published at an expense of ninety six 20/100 dollars. Of these, one hundred and ninety copies have been distributed and ten remain on file in the sec.'s office.

The financial condition of the society will not permit future publications in pamphlet form unless collections are more promptly made.

Respectfully submitted,
(Signed) S. D. Mercer, M. D., chm. com

Com. on Grievances—no report.

Sections:

Surgery—Com. reported several cases under this head.

Case No. 1—Dislocation of Tarso Metatarsal Articulation, by D. W. Hershey.

Case No. 2—Gangrene of Submaxillary gland, by R. C. Moore.

Case No. 3—Amputation of Middle of Thigh of Child 4 Years Old, by D. W. Hershey.

Case No. 4—Perforating Wound in Abdomen With Protusion of Omentum, by N. B. Larsh.

Case No. 5—Lithotomy, by W. H. Hess.

Case No. 6—Excision of Upper Third of Humerus With Head and External Border of Scapula, by W. H. Hess.

Case No. 7—Hydrocele, by Geo. Tilden.

The above cases being long and tedious, reference is made to files of secretary.

(Signed) D. W. Hershey, M. D., chm. com.

Section on Practical Medicine—no report.

Section on Anat. and Phy.—no report.

Section on Obs. made no formal report, but some cases of interest were read and placed on file.

Section on Materia Medica reported as follows:

Report on Sec. on Materia Medica, 3rd annual meeting Nebraska State Medical Society.

In presenting this, the first report offered from this Sec., although two annual meetings have passed, it would seem proper that some slight notice should be taken of our local materia medica.

After diligent inquiry for statistics by letter and examination of all publications accessible, I find our flora so similar to the states east of us as to present little of interest in a medical point of view.

In looking over a catalogue of some two or three hundred names, I find only about thirty or forty which have been honored with a place in the dispensatory.

I append hereto a list of such, with their botanical names, medical use can be found by referring to U. S. Dispensatory.

There are some others possessing medical virtues, but to extensive pharmacopia it would be scarcely deemed wise or desirable to add.

We have some mineral springs of considerable medical (value) which may become of interest as our country becomes settled up more thickly, and its invalids begin to inquire after such places of resort for health and recreation.

Thanks to the benign and delightful atmosphere of our healthfully situated state with its high, healthful and well watered prairies, which are better for health than crowded watering places, and our exemption from chronic, epidemic and malignous diseases, it has not become necessary to fit up those springs for the sick.

The greater part of our population at present, are engaged in the laudable effort to place themselves in such circumstances of affluence to be able to avail themselves of such benefit in the future.

The remainder of the report is too long and tedious to copy, but is preserved among the original files for future reference.

Section on Forensic medicine made no report.

The address of the retiring president was then delivered and the newly elected officers duly installed.

Dr. Framka of Lancaster was then presented as a member by invitation.

The place of holding the next annual was then discussed, and by ballot Plattsmouth was selected.

The election of permanent members was by motion deferred until a subsequent hour.

New oppintments to fill standing committees and sections:

Committees

Arrangements—John Black, L. H. Robbins and W. Donald.

Foreign Correspondence—Geo. Tilden, V. H. Coffman and R. C. Moore.

Ways and Means—D. M. Hershey, L. H. Robbins and Geo. Tilden.

Publication—S. D. Mercer, S. C. Denise and E. Van Buren.

Grievances—S. D. Mercer, J. H. Peabody and D. Gilbert.

Sections

Surgery—J. H. Peabody, H. Hess and L. H. Robbins.

Obstetrics—John Black, L. H. Abbott, V. H. Coffman.

Practical Medicine—Tilden, Bowen and Fuller.

Materia Medica—Tingley, Campbell, Bowen.

Anatomy and Physiology—Hershey, Moore and Van Buren.

Forensic Medicine—Abbott, Larsh and Pinncy.

All members of the standing committees and sections are instructed to aid as much as possible in securing full reports, and not as formerly, trusting entirely to the chairman.

New Business

Proposed amendment of Art. III of constitution:

To read—The annual meeting of the society shall be held on the first Tuesday of June each year.

The place of meeting shall be determined for each next succeeding year by a vote of the society in which vote a majority of all present entitled to vote shall be sufficient decision and shall determine the place of meeting.—(Tilden).

Proposed amendments to by-laws:

Resolved that arts. no. 4, 5, 6 and 12 of the by-laws be placed in one by-law and numbered 14, the others to be numbered to correspond with this and to be left in their present order.

Instructions to Secretaries:

Resolved that the corresponding secretary of this society be instructed to correspond with physicians in counties where no societies exist and urge an immediate organization, and elections of delegates to the State Medical Society.—Carried.

Resolved that the corresponding secretary of this society be instructed and requested to forward copies of the transactions of this society to all other state medical societies, and request them to furnish him with copies of their proceedings for the purpose of review by the committee on Foreign correspondence, to which committee he shall forward the numbers secured, dividing them equally between the members.

Miscellaneous and Unfinished Business

Resolved that as soon as the Treasurer shall ascertain the condition of the funds of this society, he shall report the same to the committee on Ways and Means, which committee is hereby authorized to levy an assessment on each member equal to the amount required to meet the expenses and pay the present debt.—Carried.

Dr. Black, delegate to the American Medical association, made a detailed report of the proceedings of said association at their anniversary meeting held in San Francisco, Cal.

On motion of Dr. Peabody, the above named report was placed on file.

Dr. Peabody offered the following which was adopted:

Resolved that this society deems the action of the Hon. Commissioner of Pensions in expurging from the roll of U. S. Pension examiners all Homeopathists and other irregular practitioners, as highly commendatory and in the best interests of the public service, promotion of the best interests of the bureau, and affording the pensioners the benefit of the most skilled advice, and it is earnestly hoped that the government will not disregard the deliberate and expressed wishes of the whole legitimate medical profession of this country by appointing to medical position and office, a class of men whose practice is not based on experience and observation, the only true ground-work of medical progress, but upon arbitrary dicta, not verified after nearly a century of trial, and which are wholly opposed to the ordinary exposition of the natural laws of physical science.

Resolved that our senators and representatives be requested to oppose the passage of any bill that may be brought before them rendering Homeopathists eligible as surgeons.

Resolved that the secretary be requested to transmit a copy of these resolutions to the Secretary of the Interior, the commissioner of Pensions and to our senators and representatives.

The following offered by Dr. Geo. Tilden was adopted:

Resolved that Senator Hascall be earnestly requested to make an effort to secure the withdrawal or repeal of an "act to regulate the practice of medicine and surgery in the state of Nebraska" approved during the pres. session.

After a visit to the insane asylum, Dr. Peabody offered a resolution which was unanimously carried, highly commendatory to the efficient manage of said asylum, under the management of present superintendent N. B. Larsh, M. D.

The Rules were suspended, and the newly elected officers installed as per by-laws and a copy of address of the retiring president requested for publication.

The following resolution offered by Dr. Peabody was adopted. Resolved that the chairman of each committee be requested to correspond with other members of committee on Sections and request them to furnish such matter as may be important to report.

The Rules were suspended and the following gentlemen elected permanent members, viz.—H. R. Benjamin, Omaha; Alexander Bear, West Point; Dr. J. W. Strickland, Lincoln; Dr. George W. Rawlins, Plattsmouth.

The following resolution communicated from the Oto Co. Med. Society was received, said resolution having been adopted by said Society, Jan. 22, 1871, at a special meeting.

(This resolution refers to some grievance but has been lost, and at any rate should go to the Committee on Grievances.)

The following motion offered by Dr. Tilden was adopted:

Resolved that the proceedings be published in pamphlet form, and that the committee on publication be instructed to omit the constitution and by-laws.

The following offered by Dr. Whitten was adopted:

Resolved that the committee on publication be instructed to publish with the next report an alphabetical list of members.

Dr. Tilden offered the following which was adopted: Resolved that it shall be the duty of each succeeding President of this society to give fifty dollars prize money to the successful competitor for the best essay upon some medical subject, to be designated by him after his election, said prize to be awarded in accordance with the method commonly practiced by medical societies.

Dr. L. H. Robbins then said—"Gentleman, I cannot permit this meeting to close without first calling up the memory of one of our youngest and most respected professional brethren, a young man of rare culture and esteemed by all and beloved by many. I, therefore, submit the following preamble and resolutions:

"Whereas God in his all wise providences has removed from our midst, Dr. G. A. Goodrich, one of our most esteemed members, therefore be it resolved,

"That this society with heart-felt sympathy tender this condolence to the friends of the deceased.

"Resolved, that notice of his death be published in our next annual report.

"Resolved, that in the death of Dr. G. A. Goodrich, this society has lost one of its youngest and most ardent members, and one who in his early life gave promise of much usefulness in his profession."

The above resolutions were adopted and several gentlemen present spoke of the merits of the deceased as a young man of unexceptional habits and rare ability.

The subject of insanity was referred to Dr. R. R. Livingstone with instructions and request to report at next meeting.

Society then adjourned sine die.

S. D. Mercer, M. D., Sec.

ALLERGY HINT VIII

It is possible to effect a result by placing an individual on a diet of foods he dislikes. We react to the foods commonly eaten.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT XII

Is a case ever completely cured? If the pathology has not originally covered too much ground, fibrosis and calcification may encapsulate the bacilli completely, and the patient can build up his general strength so that he is in as good a condition as a normal person.

—Miles J. Breuer, Lincoln.

EDITORIAL PARAGRAPHS

It is stated that ten million Americans are deaf.

The next medical examination will be given November 22-23-24, State House, Lincoln. The next basic science eramination will be given October 3-4, State House, Lincoln. All applications should be on file at least 15 days prior to date of examination.

Almost an entire year has been added to the general average duration of life by America's successful battle against tuberculosis within the decade from 1920 to 1930, according to statisticians of the Metropolitan Life Insurance Company.

In Sweden, in the sixteenth century, there were "barber-surgeons" and they had a code of ethics approved by the King as witness: "No barber-surgeon shall bandage someone all ready treated. Whoever does so will be fined one pound of wax for each offense." That was good doctrine.

Dr. John M. Dodson, Chicago, for many years dean of Rush Medical College and later until a few years ago, when he retired, director of the Bureau of Health and Public Instruction of the American Medical Association, died August 15, 1933, aged seventy-four years. He was one of nature's noblemen.

Visitors to Chicago's great World Fair, especially if they are medically or surgically minded, will pause in their peregrinations with a great deal of interest before an attractive glass case which houses the exhibit of the Bard-Parker Co. Here they will see an unique display—not only one, but *sixty*, centuries of progress in the evolution of the surgical cutting surface.

The Missouri-Kansas Neuropsychiatric Society will hold an all day session in the Congress Room at the Hotel President, Kansas City, on Friday, October 6th, beginning promptly at 8:30 a. m. with a round table luncheon at noon, the annual dinner at 6:30 p. m. and a scientific program in the evening. Dr. G. Alexander Young and Dr. G. W. Dishong, Omaha, are two distinguished guest speakers.

We gather from the *Michigan Medical Journal* that under the Financial Responsibility Law recently enacted in that state all drivers of motor cars must carry indemnity insurance. This to insure responsibility of the reckless driver. The penalty for noncompliance with the provisions of the law is that if an accident happens by reckless driving such driver's license is permanently revoked unless he can indemnify the injured person.

The new editor of one of the foremost state medical journals, after eight months of editorial service, in his report to the association says that "the better state medical journals are those which have editorial boards; the few remaining journals that are under one man control do not compare with the other group." Reminds one of the newly-rich American woman who on being presented to the Queen replied to one of the Queen's pleasantries, "Queen, you said a mouthful."

"The horse pricks up his ears and hears sounds lost entirely upon his driver. The watchmaker hears noisy indications of improper functioning in a watch whose owner asserts it ticks just as it always did, but is remiss as to accuracy. The family dog or cat, asleep on the hearth, is startled by someone approaching the house long before the footsteps are heard by human ears. A motorists can tell by ear when something goes awry with his motor, although the passengers may sense no difficulty. Adventure stories are replete with instances of uncivilized natives hearing sounds and sensing dangers with an ability that seems uncanny, but is due to keen hearing. Musicians suffer acute agonies because their supersensitive ears hear discords unnoticed by others."

The Eleventh and Twelfth Councillor Districts of the Nebraska State Medical Associations are to hold a clinical assembly which is to be held in North Platte beginning Sunday noon, November fifth, and ending Tuesday noon, November seventh.

Elaborate preparations are being made in providing talent and entertainment for this meeting and it should be interesting to the physicians of Nebraska, especially of the western half of the state.

For the scientific sessions twenty speakers have been secured which includes Drs. Pemberton and Boyd Gardner from the Mayo foundation. Others are from Omaha, Lincoln and eastern Nebraska, also from Denver and western Nebraska.

The last day of the assembly is to be held jointly with the dentists of western Nebraska who are to be in session also at the same time in North Platte.

Entertainment features which are to be offered include a sound film covering a medical subject, a banquet and stage entertainment at which the "piece de resistance" is to be venison; a golf tournament, duck hunting and ending with a wild duck dinner.

Special programs and entertainment are to be provided the ladies. This meeting is indeed one which should attract attendance from a wide area, and will no doubt be valuable, instructive and entertaining.

NECROLOGY

Vernon V. Talcott, Republican City; native of Iowa; Nebraska University College of Medicine, 1917; practitioner at Republican City for the past ten years; theretofore at Crofton for upward of three years; in medical corps in overseas service during the war; died suddenly of a heart lesion, August 11, 1933, aged about forty-two years. A widow survives.

Arthur B. Adams, Florence (Omaha); native of Iowa; Creighton University College of Medicine, 1905; practitioner at Florence for twenty-five years; instructor on diseases of children in his alma mater for several years; died of pneumonia aggravated by a heart lesion, August 16, 1933, aged sixty years.

THE SOCIETIES

One of the best, if not the very best meeting of the **Elkhorn Valley Medical Society** ever held, was the annual meeting at the Norfolk Country club, August 25, afternoon.

The papers were well presented, illustrated with screen work. About one hundred physicians were present. The program:

Case Report, "Renal Calculus in Infant," Dr. G. N. Nilsson, Bloomfield, Nebr.

"Indications for Interference in Obstetrics, Choice and Technique," Ralph Luikart, M. D., Omaha, Nebr.

"The Position of Decapsulation of the Kidney in Treatment of Urinary Suppression," A. D. Dunn, M. D., Omaha, Nebr.

"Medical and Surgical Management of Malignant Lesions of the Descending Colon and Sigmoid," Drs. C. W. Mayo and Bargen, Mayo Clinic, Rochester, Minn. Slides and moving picture demonstration.

HUMAN INTEREST TALES

Dr. Glen Joder has located at Peru.

Dr. C. A. Pierson, Beemer, was reported ill last month.

Dr. B. C. Pease, formerly of Lincoln, has located at Syracuse.

Dr. and Mrs. H. Melerian, Plainview, spent a month in Yellowstone Park.

Dr. John P. McDonough, Gunnison, Colo., visited at Scribner recently.

Dr. George L. Wagner has moved his office from Scottsbluff to Gering.

Dr. and Mrs. F. A. Burnham, Arnold, visited at Yuma, Colo., recently.

Dr. F. W. Maxey, Superior, submitted to an appendix operation recently.

Dr. J. I. McGirr, Beatrice, visited a sick brother at Los Angeles in August.

Dr. A. L. Marsteller, Wilcox, spent some time fishing in Cass lake, Minn.

Dr. C. W. Burchard, Falls City, visited the Big Horn country in August.

Dr. R. F. Jester and family, Kearney, spent their vacation at Lake Okoboji.

Dr. P. C. Mockett, Kimball, returned September first from a trip to Alaska.

Dr. Lincoln Riley, Wisner, visited his son, Dr. W. K. Riley, at Fort Lyon, Colo.

Dr. A. E. Reeves, Farnam, scoured the Wyoming wilds for deer in September.

Dr. F. W. Kreuger, Jacksonville, Fla., visited his parents at Gilead in August.

Dr. G. A. DeMay, McCook, visited his parents at Fort Collins, Colo., in August.

Dr. and Mrs. E. E. Clark, Ashland, visited Yellowstone Park the last of August.

Dr. and Mrs. E. E. Simmons, Omaha, spent a short vacation in Colorado, recently.

Dr. Fred C. Ferciot has become associated with Dr. J. E. M. Thomson, Lincoln.

Dr. Louis Katzberg has become associated with Dr. George Hoffmeister at Imperial.

Dr. and Mrs. C. P. Charlton, Palmyra, made a trip to Canadian points last month.

Dr. and Mrs. G. H. Walker, Lincoln, motored to Wyoming points during August.

Dr. A. J. Griot, Chadron, took special work on the eye in Boston during the summer.

Dr. and Mrs. Albert Fricke, Los Angeles, former Omahans, visited Omaha last month.

Dr. W. J. Kavan and son spent some time in Colorado looking after farming interests.

Dr. and Mrs. C. S. Hubbard, Mason City, had as a vacation, a trip to the Colorado mountains.

Dr. and Mrs. W. J. Douglas, Ainsworth, visited their daughter in Chicago early in September.

Dr. Kenneth Baker, Holdrege, is going to Europe for special study in obstetrics and gynecology.

Dr. John Holst, Omaha, has returned from clinics at Drammen, Oslo, Stockholm and Copenhagen.

Health Week at the State Fair was a grand success in every way. More about this next month.

Dr. and Mrs. G. J. Rubelman, Tecumseh, visited early day haunts at Muscatine, Iowa, last month.

Dr. and Mrs. J. B. McPherson, Hastings, spent two weeks at Dorsett, Minn., the latter part of August.

Dr. C. C. Drummond, Norfolk State hospital, visited his son, Dr. Clarence Drummond, at Medford Oregon, last month.

Dr. Hugo Chaloupka and family, Los Angeles, visited friends at their former homes, Omaha and Wilber, recently.

Dr. J. J. Bruce, Madison, has been appointed examiner for the Veterans Administration bureau for Madison county.

Dr. J. A. Tamisiea, Omaha, was elected vice president of the Aero-Medical Association at a meeting in Chicago recently.

Dr. M. C. Howard, Omaha, entered the district golf tournament at Lake Bay, Minn., and come home with the championship.

Dr. Beulah Sundell, former Newman Grove resident, now student physician at Vassar college, visited at Newman Grove in August.

Dr. Thomas Findley, Philadelphia research worker, visited his parents, Dr. and Mrs. Palmer Findley, Omaha, in August and September.

Dr. A. N. Howley, Norfolk oculist, sustained an impacted fracture of the neck of the right femur in a fall on the hospital floor, late in August.

Dr. W. W. Arrasmith, Grand Island, made a trip to Washington in the interest of the aviation section of the Grand Island Chamber of Commerce.

The annual meeting of the American College of Surgeons will hold its annual meeting in Chicago, October 9-13, with the usual array of talent, national and international.

A dope fiend visited the office of Dr. G. E. Pennington, Broken Bow, and took a quantity of dope and other office paraphernalia. The thief was tracked and later arrested and jailed.

The Dr. Arno Bald family, Platte Center, spent their vacation in the Yellowstone, The Tetons, and the Jackson Hole country to which they have become firmly attached by previous visits.

It is stated by the New York Times that in nearly one thousand cities in the United States the infant mortality for 1932 reached its lowest rate, which was just about half of the infant mortality rate of twenty years ago.

Dr. Chas. H. Arnold has been in Europe taking post graduate studies since June 5th. He is spending most of his time in Vienna but spent the 10th to the 20th of August in Switzerland. He attended the International Goitre Conference at Bern as a delegate of the American Medical Association. He reports an excellent meeting. Following the official conference, he with a few other American surgeons, spent several days in the various Goitre Clinics of Switzerland and one day at the National Cretin Farm, which is about fifteen miles out of Bern. The treatment accorded the party at the various clinics was most cordial. It has also been learned that Dr. Arnold has been elected a member of the Executive Board of the American Medical Association of Vienna.

BOOKS RECEIVED

THE HISTORY AND EPIDEMIOLOGY OF SYPHILIS, by Wm. Allen Pusey, A. M., M. D., LL. D., Professor of Dermatology Emeritus, University of Illinois, sometime President of the American Dermatological Association and of the American Medical Association. 110 pages, 38 illustrations, cloth cover. Price $2.00. Published by Charles C. Thomas, 220 East Monroe St., Springfield, Illinois.

MIGRAINE, Diagnosis and Treatment, by Ray M. Balyeat, M. A., D. D., F. A. C. P., Associate Professor of Medicine and Lecturer on Diseases due to Allergy, University of Oklahoma Medical School; Chief of the Allergy Clinic, University Hospital; Consulting Physician to St. Anthony's Hospital and to the State University Hospital. 242 pages, 26 illustrations, five of which are in color. Cloth. Price $3.00. Published by the J. B. Lippincott Company, Philadelphia, Pa.

BENIGN TUMORS OF STOMACH

Bruce C. Lockwood, Detroit (*Journal A. M. A.*, March 19. 1932), gives the relative incidence of benign to malignant growths in the stomach as about 1 to 20, as shown by the records from both operating and autopsy rooms. The percentage of diagnosed cases of benign tumors would be increased by more frequent and more careful fluoroscopic study. The roentgen observations are reasonably characteristic. In order to demonstrate the smaller lesions, the stomach must contain only small quantities of the contrast mixture, the walls must be approximated by manual pressure, and the patient must be examined in both the upright and the prone position. The symptoms are not typical; they vary with the site, size and character of the lesion, and may simulate other forms of indigestion. Because of the tendency of these slowly growing benign tumors to become malignant, their recognition is important and their surgical removal indicated.

PSYCHOTHERAPY AND GENERAL PRACTICE

Lauren H. Smith. Philadelphia (*Journal A. M. A.*, May 21, 1932), presents briefly a few points about some of the patients who have been seen at the Institute of the Pennsylvania Hospital. These patients are those who have been greatly troubled with what is called general nervousness, depression, or other emotional difficulties. During the course of the day's work, both in the outpatient department and with the resident patients of the institute, one is astounded not only by the psychiatric difficulties and the evident need for good mental hygiene but also by the close association of these problems with those of general medicine found in the history or in the physical condition of the patient. Most of these patients are referred to the psychiatrist by the general practitioner, and the very troubles with which the psychiatrist is now dealing have undoubtedly been handled, knowingly or blindly, by the family physician, who, unfortunately, seems to be less and less in evidence. Since most of these patients go to see their family physician, it seems important that the experience gained by the neuropsychiatric specialists should be passed on directly and purposely to the physician who is usually consulted first, the general practitioner. One gets the impression that to handle some of these patients successfully the physician needs to be present in at least three identities; namely, doctor, confessor and lawyer. There are certain times during the progress of each individual from birth to death when stress and strain seem to make greater inroads. For brevity, the author discusses briefly one case taken from each age period in which the stresses or strains may be particularly troublesome.

REGURGITATION RENAL COLIC: CLINICAL ENTITY

Bransford Lewis, St. Louis (*Journal A. M. A.*, Feb. 20, 1932), reviews the experimental and clinical work of various investigators which has established that, under appropriate conditions of tonicity and pressure on the filled or semifilled bladder, urine or fluid regurgitates through the healthy and intact ureteral orifice back into the ureter and up even to the renal pelvis. He reports nine cases of renal colic in which the cause appeared to be ureteral regurgitation. While he appreciates the desirability of direct evidence, such as roentgenograms showing regurgitation and overfilled ureters at the time of paroxysms in these cases, it is obvious that such evidence has been unattainable prior to the advent of intravenous urography, because the introduction into the ureter of a catheter would, per se, destroy the evidence that was sought; namely, pent-up urine under backward pressure. But now that intravenous urography is available, it is hoped that that object may be accomplished even though it may entail prolongation of the colic while the investigation is being made. At any rate, the author hopes that the evidence of regurgitation renal colic as a clinical entity submitted by him may be sufficient to merit the attention of the profession and receive either confirmation or denial from its observations.

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PRESIDENT'S ADDRESS*

C. A. ROEDER, M. D.,
Omaha, Nebraska.

Mr. Chairman, members of The Mayo Clinic Staff, The Mayo Foundation and Guests: To you I desire to express my gratitude for the honor you bestowed on me one year ago and for allowing me to retain this enviable position during a period of complete inactivity. May I take this opportunity of thanking the various committees and those who participated in presenting to us such an excellent and constructive program.

During the past year I have had ample time for meditation, which gave me an opportunity to obtain a broader view than I previously possessed, of the art of medicine in general. I wondered many times, and apprehensively, about what I could recite to you in these days of the greatest uncertainty accompanied by a social and economic revolution surpassing all such upheavals in man's history. Dr. W. J. Mayo stated last year to a few of us that he was in no way certain as to the future of medicine in the next ten years and Dr. H. S. Plummer remarked that very few individuals wanted advice. I have therefore an excellent excuse this evening for avoiding any effort toward trying to pose as a prophet or an adviser.

The older I become the more I appreciate my previous association with The Mayo Clinic and the more I feel the great privilege this Association enjoys. We have been taught here the most useful application of the various arts of medicine and the Clinic is our mecca to which we are welcomed and where again we are instructed during our annual pilgrimage. Few societies are blessed with such a common denominator, the same medical language so to speak, and what a future this organization possesses if it has the vision for the possibilities placed before it here in Rochester. The objects of any medical organization should be, first to increase the efficiency of its members and, second, to assist the public toward a better understanding of what medicine is endeavoring to accomplish. The more aloof we remain from mankind the more we must expect from it a failure of proper recognition. Medicine originated with laymen, but occupied at first a most inferior position, which it well deserved and only recently has it showed any signs of paralleling the progress of materialistic man. It has always been, and still is on the defensive, and its goal should be to lead man benevolently, and to occupy a position beyond attack. Only within the past few years have medical societies attempted to enlighten the public, but they could make contact only with pupils too well advanced in years. The increasing, and unappreciated, demand for knowledge has left the teacher in a more thankless position than ever; and the general collapse of monetary prosperity has inflicted on the profession a tremendous decrease in its patronage by the public. This places before us a very serious question, namely, has there been an unnecessary application in volume of the art of therapeutics or are the people, who previously consulted the profession, simply neglecting their own physical and mental welfare? If the former is true all therapists must readjust themselves to the fact that the future presents a different outlook than the recent past. A better economy in the alleviation of illness must be recognized by the profession. The public will not tolerate failure on our part; a new era demanding greater efficiency is here.

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*Read before the meeting of the Association of Resident and Ex-Resident Physicians of The Mayo Clinic and The Mayo Foundation, Rochester, Minnesota, October 5 to 7, 1933. To be published in the Proceedings of the Staff Meetings of The Mayo Clinic and The Mayo Foundation.

Man's mental and physical welfare is wrapped up within his own inherent qualities and his environment; and to have a better understanding of himself and his surroundings he must know more about himself and his reactions to normal and abnormal life in general. This means another new era in early education, by which there must be instilled in the youth a much better biological background than ever before. What is now known as the premedical education may well be, with some modifications, a standard course for all students in our elementary schools. Without such an instillation the tremendous abyss, always having existed between the public mind and that of the medical profession, cannot be obliterated. There is far too much useless and false education which breeds radicalism on the part of the so-called younger intellectuals, "collegiate psychotics," who live on fancies instead of facts. Man has proved, during the past few years, that he cannot evaluate his ownself and his relationship to his environment, perhaps mainly because material progress has outstripped mental progress. He at present has lost his objective and is more impressed by the superlative; that is, the largest, the greatest, the best, and so forth. He is permitting civilization to burn up with friction. This materialistic attitude enters more easily into the younger minds, giving them a faulty foundation for religious, philosophic, biologic and cultural attitudes. Their emotions have been stimulated and have gone beyond their control, throwing them into this maelstrom of dissatisfaction from which they shall have no little difficulty in extracting themselves. Education is a dangerous tool and only too few are endowed with the qualifications for its proper use, particularly during this vertigo of Western civilization. Must we always progress through blood and war? Is our present condition a submerged war conflict? Are we "anxiously psychotic?" The old frontiers and new territories are practically gone, forcing man to turn back to face himself. The experience of mankind must be re-allied to man; the two became separated, and the reunion may be painful as well as difficult. The pedagogue must face the fact that he has not offered nor shown the youth a good enough purpose in life nor offered a comprehensive reason why life is worth living at all and properly. It is true that we know less about ourselves than we do of others and the more educated and more intelligent we become the more unfinished we feel. Our leading men became great because they pushed themselves beyond the ordinary limits of their ego, having a definite objective and a good understanding of the value of relevancy. Their efforts and success are always well worthy of review. Man progressed from the phobiac, to the philosopher, then to the scientist and lastly to the psychologist. During this time he has become increasingly anxious and dissatisfied; he wants the future behind him, he cannot adapt himself to the advance of materialism over humanism; his evasive behavior has brought him where he is today.

There is one encouraging sign on the horizon for the Western hemisphere, providing we retain our faith in art, culture and religion, as well as in science. The Germanic process of massive instillation of education has been supplanted in several of our universities by the English system, which aims for character and conduct as well as efficiency. Students of medicine conduct themselves generally according to their early education and heritage, they are born in their preliminary environments as well as of their ancestors. They begin "graduating" from the time they entered elementary schools until they finish medical college, graduating from just what too few of them ever knew. Too many youths of today lost, or never possessed, a proper sense of obligation to their progenitors. They knowingly or unknowingly are preparing themselves for a serious conflict.

Basically man carries with him immature and mature characteristics. The former are nonmoral and non-logical and are characterized by his lower reflexes, by habits and by slightly higher instincts and emotions. His mature characteristics are moral and logical and are characterized by intelligence and a power of choice, resulting in ideals and objectives. As his civilization advanced, his desires for facts increased and the invention of tools was man's first mental accomplishment. Later he advanced through a better knowledge of the use of heat and cold. Even today instruments of precision, with heat and cold, are the backbone of material progress. The next step in the progrss of man came through the invention of mathematics, the first discovery for him toward a knowledge of accuracy. Then followed the severe logic of Socrates, which demanded accurate definitions. Plato soon after invented laws which compelled a broader application of more accurate thinking, the forerunner of science. Aristotle then appeared with his syllogistic tool of keen analysis, but no further progress in civilization occurred until the laboratory sciences were developed. To me, The Mayo Clinic seems to have been built by the most intelligent use of these various steps in the progress of mankind.

One of the greatest misfortunes in the practice of medicine is that the preliminary credential, the medical school diploma, is about the only one which the public is capable of recognizing. Perhaps, for the sake of the profession and society in general, additional credentials of increasing importance, obtained only through properly recognized achievements, would present to the public better means for recognizing the worthiness of the various practitioners. The public should know that thirty years of practice, accompanied by an increased efficiency, results in a far more valuable student of medicine. In other great efforts of mankind the ages of sixty years and beyond are given due recognition. In medicine there is a tremendous loss of society in its failure to recognize the value of mature minds and honorable characters. Here is another point in favor of group medicine, wherein the young can be better guided and the mature have ample opportunity to render their services to society.

It is interesting to note how the older student searches more and more for principles of conduct. As Dr. C. H. Mayo has often said: "Too many students know things to be true which are in reality untrue." The foundation of all principles should be as scientific as possible, in order to act as an antidote against the innovating philosopher. The happiest life in any effort rests on fundamental reasoning which does not obliterate imagination, ingenuity, originality, boldness, and enterprise. Our whole educational structure in medicine has rested too much on the application of the study of the abnormal. Without a primary interest in normal life of all types, students of medicine are, in too many instances, mere slaves to the derangements of the living and dead, becoming blind to the marvels of the universe.

Without this interest in life itself the student of medicine rarely understands the results of investigations, scientific and theoretical deductions, philosophic assumptions, formulas, and so forth, which are necessary for the search for truth. The mere pedant, who in his laborious, dry efforts fails to see the wonders of nature all around him, too often becomes a student of medicine as morbid as the diseases with which he comes in contact.

Let us try to enter the younger minds, assist them in appreciating the fact that a knowledge of biology is the most fundamental study for nonmedical as well as medical students. This will help obliterate the space between general and fundamental medicine. The earlier we reach the new and permanently materialistic mind the easier it will be for it to recognize what the normal and abnormal life consists of and what the profession of medicine is trying to accomplish. Perhaps we may be able to change our methods of placating the unworthy with diplomas which at present state that as soon as they graduate or leave a preliminary medical school they, each and every one, are physicians and surgeons. It takes time, endurance, character, and training over many years to produce a true physician or a surgeon. Should not the public know this?

I leave what little I have said this evening for your judgment, which is far better than mine. I feel that this Association has greater duties before it than ever before, particularly along the line of sociologic and scientific endeavors and that it should try toward achievement sufficiently far that The Mayo Clinic may be as proud of the Association as the members of the Association are of their beloved and respected masters here who gave them more than they ever can repay.

SYMPOSIUM ON DEEP X-RAY THERAPY

(I) THE MERITS AND LIMITATIONS OF RADIOTHERAPY IN THE CONTROL OF CANCER*

HOWARD B. HUNT, M. D.,
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It is generally conceded that x-ray and radium are of some value in the treatment of malignant disease. To be sure, there are still a few doctors who maintain that, in their experience, no cases of cancer are ever cured by radiation. On the other hand, a few enthusiasts appear to have proclaimed radiotherapy as a cure-all for malignant disease. In the face of this disagreement and confusion, it is not surprising that we have found it very perplexing to evaluate the advisability of radiotherapy when confronted by an individual case of malignancy. An effort will be made to partially clarify the answer to this problem by submitting statistical reports from well recognized clinics covering representative groups of cancer involving various regions of the body. These facts should furnish at least a background for the evaluation of efficient radiotherapy in carcinomata.

The intelligent interpretation of statistics on results in the treatment of cancer requires a sufficiently large group of cases with incontestable diagnoses, accurate classification of the extent of the lesions and adequate follow-up study. It is occasionally difficult to absolutely establish the diagnosis. If a biopsy was not made the diagnosis is questioned and if a tissue report was made, even that may be questioned. For example, the changing opinions of pathologists regarding the diagnosis of malignancy in breast tumors and in giant cell bone tumors would alter some statistical cures reported ten to twenty years ago. This applies to statistics covering the results of surgery as well as those concerning radiotherapy. Different standards for classification as to the extent of the disease make only a relative comparison of various statistics possible. A lesion may be considered type II and operable by one examiner, and type III and inoperable by the next man. Groups of cases will vary in their actual proportion between early and advanced disease. The statistics on radiotherapy are nearly always based on groups of more advanced cases than those which form the basis for surgical cures.

A few energetic therapists, have at times, made over-enthusiastic claims, which may have appeared valid at the time, due to an inadequate follow-up period. Unfortunately, this has closed the mind of many people to a belief of any report on the value of radiation in the treatment of cancer. A follow-up period of two to five years or more is necessary for the adequate testing of results. The statistics included in this review are based almost entirely on "five-year cures." The great majority of patients who pass the two-year period without recurrence or metastasis will reach the five-year status. The five year period leaves the patient and doctor feeling quite secure, although recurrence or latent metastasis may appear five. ten or even twenty years after the apparent complete eradication of the local lesion by surgery or radiation. In view of this possibility, it has been suggested by some authors that the term "arrest" should be used instead of "cure" as applied to the apparently successful results of cancer therapy. The terms arrest and cure are used interchangeably in this review.

The results of radiotherapy in the treatemnt of cancer have improved greatly during the past decade. The evident inferiority of some results based on an antiquated method of treatment has often been misinterpreted as a conflicting report. It is to be expected that technic, methods and dosage should improve under the guidance of such masters as Forssell, Regaud and Ewing, through their keen analysis of an extensive experience in results of radiotherapy. Better reports and altered generalizations must follow better therapy. For example, Heyman of the Radiumhemmett denounced deep x-ray therapy as an adjunct to radium for cancer of the cervix in 1924. In 1931 the same therapist firmly established the superiority of combined deep x-ray therapy and radium in comparison with radium therapy alone in the treatment of cancer of the cervix.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

Radiotherapy includes the use of x-ray and radium. The radiations produced by an x-ray tube and by radium differ only in regard to their wave length and to the local concentration of the radiation emitted. The gamma radiation of radium is of shorter wave length than that from even the most powerful x-ray generator in use, and as a result, is more penetrating. The compactness of radium as a generator of radiation allows it to be implanted directly within the tissues, to be inserted within cavities, or to be placed in contact with superficial lesions. In this way the intensity of its effect can be closely localized to any region of the body. Radium is therefore, admirably adapted to the treatment of localized lesions, whether they be on the surface, within a body cavity, within a lymph gland, or in the interstitial tissues. Implanted radium always gives a patchy distribution of radiation intensity and is not well adapted for the homogeneous treatment of large tumor masses, except by the use of multiple foci.

Surgery, electro-coagulation and radium therapy appear to be the most generally applicable methods of eradicating localized lesions. The types of localized lesions that are best adapted to x-ray therapy alone are superficial cancers of the skin and lip, especially the basal cell lesions and the unusually radiosensitive malignancies known as transitional cell epithelioma by Ewing, occasionally occurring in the pharyngeal regions. and less commonly, elsewhere. Other localized lesions may be treated by x-radiation when used in conjunction with other forms of local therapy. Wintz and Pfhaler have proclaimed the merits of x-ray therapy in the treatment of cancer of the uterus and cancer of the breast respectively. It is more generally accepted that internal radium therapy, combined with external x-ray therapy ordinarily gives results far superior to those obtained with x-ray therapy alone in cancer of the uterus and cancer of the breast.

The homogeneous treatment of large tumors or widely disseminated malignancy is, in general, accomplished more efficiently by means of deep x-ray therapy than by radium. An even dosage is needed throughout the tumor or region and this is best attained when the source of irradiation is at a distance of twenty to forty inches. It is then possible to spray and drench the entire region with rays. When the distance between the source of irradiation and tissues is short, the intensity falls greatly according to the inverse square law as the radiation travels into the slightly more distant tissues. That is to say, cancer cells which are two centimeters from a source of radiation will be exposed to only one-fourth the intensity of the radiation reaching cancer cells one centimeter from the source of radiation. At a distance of eighty centimeters from the source, of irradiation, the decrease in intensity at an additional distance of one centimeter would be negligible, whether the radiation come from an x-ray tube or radium. The radium pack, at a distance of five to twenty centimeters is being used in a few radium centers for the homogeneous irradiation of large tumors and gland-bearing areas, but its limited availability and great expense make it prohibitive for general use. X-ray therapy is adapted particularly to the treatment of inaccessible lesions, large tumors, gland-bearing areas, diffuse or multiple tumors, skeletal metastases and advanced disease where only palliation is attempted. In the treatment of gland-bearing areas, x-radiation alone is rarely sufficient to control obvious metastases and should be used in combination with surgery or radium implantation. Recurrences and metastases may be arrested for long periods of time, once in a long while, even permanently. Large and infiltrating tumors, originally considered inoperable, may be shrunken in size and become movable, allowing their successful operative removal following x-radiation.

There appears to be some slight difference in the biological effects of the radiation from radium and x-radiation. According to Ewing. radium appears to have a somewhat more direct effect upon the malignant cells in bringing about their dissolution, whereas x-ray has relatively more effect on the reaction of the surrounding interstitial tissues. Both reactions are of value, the one leading more directly to the death of the cancer cells, and the other having the additional effect of enmeshing the residual cancer cells within fibrous tissue, thereby holding them in check or starving them to death. The effects of x-ray and radium are supplementary and in no way antagonistic. Endothermy appears to be of value when used in association with radium, since the heat induced weakens the cells and makes them more susceptible to radiation and the radiation in turn makes the cells more susceptible to the lethal effects of the heat.

Progress in radiotherapy has come from many sources. Studies in radiobiology by Regaud, Ewing, and others have developed generalizations regarding optimum intensities of administration, proper duration of total periods of treatment, optimum densities and thicknesses of filters, selective effects of various wave lengths of radiation and the varying radio-sensibility of different malignancies to radiotherapy. The radio-physicist has developed methods of accurately measuring the intensity of radiation by determining the rate of discharge from an electroscope exposed to the rays. The unit of intensity is known as a roentgen, and radio-biologists and clinicians have interpreted it in terms of biological and therapeutic effects. Failla and Quinby have determined the distribution of radiation intensity about various groupings of radium foci and interpreted these in terms of biological units such as erythema doses. The use of methods of physical measurement has made possible accurate dosage with the bringing about of a desired biological effect, and has made it possible for the general radiotherapeutist to adopt the methods, technics and dosages established by the pioneers and masters of the science of radiotherapeutics. Unfortunately, radiotherapeutics is an art as well as a science and the seasoned judgment of the masters of the art can only be approached through clinical experience, the same as in surgery or in medicine.

The tools of radium therapy have been improved in accord with the generalizations established by the radio-biologist, which call for higher filtration and lower intensity preparations. Radon has been developed as a more convenient form of interstitial irradiation. Radium packs have been assembled in a few clinics where a sufficient quantity of radium is available. The tools of x-ray therapy have been improved by research physicists and manufacturers, making possible the delivery of x-radiation of shorter wave length in greater intensity. These improvements have made possible the delivery of a greater percentage of the total dosage into the deeper tissues, with a minimum of change in the skin and superficial tissues. Optimum voltage for x-ray generators has not yet been determined. Some x-ray machines are in operation using voltages up to 800,000, but as yet. insufficient time has elapsed to allow accurate evaluation regarding their accomplishment. The greatest advances in radiotherapy have come from a better understanding of the principles of radio-biology and the application of the physics of radiation through these in the improvement of technic, method, dosage and proper selection of cases.

The earliest observed cure of cancer by the roentgen-ray was reported by Stenbeck in 1900. A few months later Johnson and Merrill reported eradication of biopsied carcinoma by means of radium. The early x-ray generators, energized only by a static machine or an induction coil, did not provide sufficient penetration for the effective treatment of deeper lesions like cancer of the uterus. The radium in use at that time was poorly screened, and the caustic effect of alpha and beta radiations was so intense as to render treatment of subcutaneous lesions impractical, due to profound damage to the overlying skin or mucous membranes.

It is to be expected that both the earliest and the highest percentage of cures of carcinoma by radiation should occur in the skin, since this group is the most accessible to treatment. MacKee, in summarizing his impressions from a review of over 600 cases of his own, and over 4,000 cases treated by others with x-ray and radium, states that cures may be expected in from 85 to 90 percent of unselected cases of basal cell carcinoma, with about the same perentage for selected cases of prikle-cell carcinoma of the skin and orificial membranes. While some workers feel that radiation therapy in itself is entirely adequate in the treatment of cancer of the skin, there are others as Phahler, who feel that electrocoagulation combined with radiation gives better results in the entire group and allows cure of some extensive cases which could not be handled successfully by x-ray and radium alone. Malignant melanomas should be treated by wide excision, preferably using electrosurgery, together with local radium therapy.

Cancer of the lip, which may be considered as one variety of cancer of the skin, appears to give correspondingly good results when treated by radiotherapy in the experience of Martin. Forssell, Kelly and others. Martin, using x-ray therapy in the treatment of 119 cases by x-ray alone was able to realize 87 per cent of five-year cures. Schreiner and Mattick, reporting five-year results in 285 cases treated by x-ray alone, found 85 per cent of lesions under 1.5 cm. arrested and 29.6 per cent of cases with operable nodes arrested for five years. Forssell, using radium therapy alone, realized 69 per cent of five-year cures in a total group of 66 cases, of which 14 were inoperable. Kelly, in a group of 94 cases of carcinoma of the lip, treated with radium combined with x-ray therapy over the cervical glands, reports 81.7 per cent of five-year cures in 82 operable cases and 33.3 per cent of five-year cures in 12 extensive cases. Pfahler, using electro-surgery, x-ray and radium locally, combined with the treatment of cervical glands by x-ray, attained 85 per cent five-year cures in 173 cases.

Cancer of the oral cavity, including the tongue, cheek and jaws, yielded to radiation therapy at a somewhat later date and the results do not yet equal those obtained in the skin and lip, although they compare favorably with the results of surgery. X-ray therapy was at first, not sufficiently understood to yield any positive cures. Coutard, using a prolonged, fractionated, low-intensity and high-filtration method of x-ray administration has been able to attain five-year cures in about 35 per cent of the cases treated. Bervin, using external irradiation and interstitial radiation by radium, with subsequent electro-coagulation in some cases, has attained 32 per cent five-year cures in 82 cases of cancer of the tongue, and 25 per cent five-year cures in 278 other cases of cancer involving the oral cavity. Regaud, in the treatment of 344 cases of cancer of the tongue, attained 23.8 per cent cures using interstitial radium in the tongue, together with block dissection of the cervical glands. Quick, in reporting 2741 cases of intraoral carcinoma treated by interstitial radium combined with external radiotherapy, and in 10 per cent of cases with surgical dissection of the cervical glands, gives promise of a corresponding percentage of five-year cures, although the statistics were too recent at the time of publication to allow their presentation on a five-year basis.

In the treatment of malignancies of the naso-pharynx, hypo-pharynx and tonsils, radiotherapy has been particularly beneficial. Surgery has been practically without results in the treatment of the neoplasms of these regions, which are practically always of a high degree of malignancy. Coutard, in the treatment of 89 cases of cancer in the hypo-pharynx by x-ray therapy, has attained 20 per cent two-year arrests and 10 per cent five-year cures by the use of x-ray therapy alone. Harmer, in the treatment of 16 cases involving the naso-pharynx. has obtained 37.5 per cent two-year cures by the use of radium therapy. Lenz has obtained comparable effectiveness in the treatment of malignancy of these regions, using a modified form of Coutard's x-ray technic. In the treatment of carcinoma of the tonsil, Coutard has obtained cure of the disease for two years in 26 per cent, and for five years in 23 per cent of his group of 59 cases, using x-ray therapy alone. Duffy, using interstitial radium combined with x-ray therapy and radium pack, obtained an arrest of disease in 50 per cent of his cases for two years and of 20 per cent of his cases for five years. Bervin, using interstitially and externally radium therapy, combined in some cases with electro-coagulation, has obtained 41.5 per cent cures for a period of two years in 53 cases. The lack of five-year statistics in this group of cases results from the recent date since which they have been successfully treated. At Bervin's clinic, no case of carcinoma of the tonsils in a group of 23 treated prior to 1923 had survived for three years. The improvement in the methods of treatment for this group of cases is further evidenced by Coutard's statistics who attained 26 per cent arrests for two years prior to 1926, and 46 per cent two-year arrests in the period since that time. Harmer has collected 520 cases of carcinoma of the hypopharynx from the literature and finds only 21 free from disease for a period of five years. Of 63 patients with sarcoma of the naso-pharynx treated by x-ray, 22 were free from disease for two to five years or more. Doubtless many cases classified as sarcoma by Harmer would be called transitional-cell carcinomas or lympho-epitheliomas by other systems of histopathological classification. Of 512 patients with carcinoma of the palate and cheek, 67 are reported alive for three to five years or more.

Carcinoma of the larynx may be arrested or cured by radiotherapy, but it would appear that in all except the most experienced hands, laryngectomy is preferrable in the operable group of cases. Coutard, using x-ray alone in the treatment of 60 unselected cases of carcinoma of the larynx reports 13 cases or 21 per cent well after five years, and 32 per cent well after three years. Gunsett, in the treatment of 23 cases, reports 21 per cent well for three years or longer. Lenz, in a more recent group of cases. describes results of comparable merit. Harmer advocates the local application of radium following fenestration of the laryngeal cartilages; of 8 operable cases so treated, 7 are living and free from disease for from 2 to 6 years. Harmer emphasizes that poor results from radiotherapy of carcinoma of the larynx may be due to faulty technic, inadequate dosage, and underestimation of the extent of the disease. On the other hand, it must be borne in mind that the treatment of carcinoma of the larynx by radiotherapy must be proceeded with cautiously and with due regard to the general condition of the patient.

Treatment of carcinoma of the para-nasal sinuses involves both surgery and radiotherapy. Harmer recommends surgical treatment in the myeloid and fibrous type of sarcoma of the nasal sinuses and a combination of surgery, diathermy and radium in the treatment of osteo-chondro sarcoma of the sinuses. New, reporting a group of 97 cases of carcinoma of the antrum, finds that the percentage of cures is very definitely increased in that group of cases treated by radium supplementary to extensive cautery, as compared with a group of cases treated by cautery alone. In the well differentiated tumors, cautery is more important, while in the more highly malignant tumors, he feels that radium therapy is the more important part of the treatment. Of 97 cases treated, 19 were living and well for five years or more. Sharp records 3 cases of extensive carcinoma of the antrum living and well five to ten years following oral section and drainage with implantation of radium. In a discussion of 71 malignancies arising in the salivary glands, Neil advises radiation and surgical excision for small tumors, and radiation alone in large or infiltrating tumors. While some of these tumors are clinically arrested by radiotherapy, radio-sensibility varies widely within the group of salivary gland tumor tissues.

There is some difference of opinion regarding the proper treatment of cervical glands in carcinoma of the head and neck. Blair, Fischel, Crile and others believe that the surgical removal of cervical glands is an extremely important part of the proper treatment of all lip and intra-oral carcinomata. On the other hand, Quick and Duffy feel that surgical removal of glands should be limited to those cases which show some enlargement of the lymph glands, together with a favorable local lesion. They feel that operative removal of the nodes is not justified in cases which show no evident glandular enlargement, or in those cases which show unremovable extensions, or in which cure of the local lesion itself is apparently impossible. Of 983 cases showing no glandular enlargement at entrance, 80 per cent remained free from enlarged nodes during the following two years. Of 81 patients with inoperable nodes, 5 were still living and well after five years. Quick advocates interstitial implantation of radon within advanced metastatic masses combined with their treatment by external irradiation. He believes that metastases from transitional cell carcinoma are always handled better by radiation than by surgery.

The merits of radiotherapy in the treatment of carcinoma of the cervix have been so firmly established that it is surprising to occasionally encounter those who still feel that hysterectomy is the therapeutic method of choice in all except terminal cases. The results of treatment in carcinoma of the cervix by radiotherapy are equal to results by panhysterectomy, and offer the further advantages of lessened morbidity and a much lower operative mortality. Furthermore, some inoperable, as well as some post-operative recurrent cases can be permanently arrested by radiotherapy. Even those cases in which cure is impossible are made more comfortable. Ward has summarized the statistics from 20 clinics covering 5024 cases treated by operation, and the statistics from 17 clinics covering 3512 cases of carcinoma of the cervix treated by radiotherapy. The results attained in those patients surviving treatment were nearly equal, which is greatly in favor of radiotherapy since this group contains many cases which were inoperable and since the primary mortality in the case of radiotherapy was 2 per cent, as compared with the primary operative mortality of 17.2 per cent in the case of panhysterectomy. In Ward's own group of 223 cases including all stages, 23.1 per cent were living and well after five years, while of his operable group, 53.1 per cent were living and well after five years. Healy, in reporting on 1574 cases of carcinoma of the cervix treated at the Memorial hospital, finds 22 per cent of all cases treated to be living and well after five years, with 55 per cent of 197 early cases to be living and well after five years. Heyman summarizes results in a group of 1237 patients with carcinoma of the cervix treated at the Radiumhemmett of which 63.4 per cent were considered inoperable. He reports 259, or about 21 per cent living and well five years or more, 90 per cent relieved of hemorrhages, 60 per cent relieved of drainage, and 53 per cent relieved of pain for varying periods of time. Of the entire group, 60 per cent were again able to return to their occupation. His most recent statistics, covering the period since 1922 show 17.6 per cent five-year cures of the inoperable group, and 52.1 per cent of cures in the operable group, or 27.9 per cent five-year cures in this more recent group of 154 cases.

Further improvement in the results of radiotherapy in the treatment of cancer of the uterus are promised with more efficient treatment of the malignancy which has extended into the parametrial tissues. Heyman, in an evaluation of combined external x-ray therapy with local radium therapy, found that the percentage of five-year cures of the entire group had risen from 20 per cent to 28 per cent, since the addition of x-ray therapy for better treatment of the parametrial tissues. The improvement is most striking in the advanced inoperable group where the percentage of five-year cures rose from 9.4 per cent to 17.6 per cent, although in the operable group the percentage increased from 42 per cent to 52.1 per cent five-year cures. Wintz reports a group of 956 cases of carcinoma of the cervix treated by extensive roentgen-therapy alone, assisted by the electrolytic administration of copper salts into the cervix for clearing-up of pelvic infections. He claims that 19 per cent were symptom free for five years or more, the percentage of five-year arrests for the early cases being given as 60 per cent, and for the inoperable cases as 12 per cent. This is surprisingly high, and such statistics have not been yet remotely approached by any other worker using x-ray therapy alone. Behney finds x-ray therapy preferable to radium in the treatment of group IV advanced cases, with complete fixation of the pelvic organs. X-radiation therapy alone reduces pain and discharge effectively, and appears to prolong life as much as when combined with cervical radium at this advanced stage. In cases with only partial pelvic fixation, the addition of radium appears to aid in the prolongation of life and betters the possibility of effecting the permanent arrest of the disease. These observations of Heyman, Wintz and Behney show conclusively that deep x-ray has a definite place in the treatment of cancer of the cervix. It is quite generally conceded that all cases with carinoma of the cervix, except those showing complete pelvic fixation should be treated with radium placed within and about the cervix, in addition to local and regional treatment by means of x-ray therapy. The only cases of carcinoma of the cervix in which operation might be considered superior to radiation are the very early lesions of relatively mature cell-type which tend to metastasize late and are less radiosensitive than the neoplasms having a more undifferentiated cell type.

Carcinoma of the body of the uterus can be effectively treated by radiotherapy and also by panhysterectomy. A difficulty occasionally encountered by the radiotherapist is that group of cases which are thought to be, and are inadequately treated as fibroid tumors instead of carcinomata. Surgery is, therefore, preferable in tumors of the uterus and pelvis when there is uncertainty regarding their malignancy. In a group of 52 cases of carcinoma of the body of the uterus Heyman reports 50 per cent five-year cures even though some of the cases included in this group were considered inoperable. Burnam, in a group of 112 cases, 66 of which were inoperable. reports 18.7 per cent five-year cures. Wintz reports a group of 219 cases of carcinoma of the body of the uterus including all stages with 20 per cent living after five years. Heyman advocates panhysterectomy for caricnoma of the body of the uterus unless contraindicated by corpulence, high blood pressure, organic heart disease, nephritis or diabetes, although he has been able to obtain closely parallel results with surgery and radiation in the operable group of cases.

Carcinoma of the ovary is less well adapted to radiotherapy, due to its inaccessibility. Heyman advocates a combination of radiotherapy with surgery in the treatment of these cases. In general, operation alone gives about 30 per cent five-year arrests, whereas the combined method gives about 70 per cent of five-year arrests. Of 24 inoperable cases treated by radiotherapy alone, 2 were free from disease after five years. Of 28 cases developing post-operative recurrence, 25 per cent remained well for five years with radiotherapy. He advocates the intra-uterine placement of radium combined with external irradiation in addition to surgery in the operable cases. Carcinoma of the vulva appears to be relatively radio-resistant, and is rarely cured by radiotherapy alone, although five-year cures may occur in about 5 or 10 per cent of patients. Of 49 cases treated at the Radiumhemmett with combined radiation and electrocoagulation, 26 per cent remained free from disease after five years. Of 14 cases of carcinoma of the vagina, 21 per cent remained free from disease after five years.

Carcinoma of the breast remains a surgical problem in the operable group of cases at the present time, although surprisingly successful results have been obtained by experts in the treatment of cancer of this appendage by radiotherapy. Keynes has furnished statistics in the treatment of 46 cases of cancer of the breast by interstitial low-intensity radium needles which compare favorably with the results of operation even in the definitely operable cases. These cases are of such recent date that the reported follow-up covers only three years. Of 9 operable cases, 7, or 77 per cent were well after three years. Of 11 operable cases showing glandular enlargement, 4 or 36 per cent were well after three years, and of 26 inoperable cases 12, or 46 per cent were well after three years. Keynes emphasizes that radium may be a very dangerous and inefficient weapon if used with insufficient care or knowledge. Pfahler. in presenting a total of 977 cases with a histological diagnosis in all except 123, obtains with x-ray a high percentage of arrests. In 339 cases combined with surgery, there were about 50 per cent five-year recoveries. As a result of pre-operative irradiation, many inoperable cases were made operable. Of 419 cases presenting recurrences or metastases, 20 per cent were alive after five years. Of 167 cases considered primarily inoperable, 30 per cent were alive after five years. Schreiner, reporting on 283 breast cases from the New York State Institute recommends radiation in combination with surgery in all operable cases. The combined method of treatment gave 65 per cent of five-year cures in early localized lesions, while radiation therapy alone gave five-year cures in only 28 per cent of the cases with localized lesions. Of the more extensive cases only 1 to 2 per cent remained well for five years after irradiation. Adair, in a review of biopsied cases of cancer of the breast treated at Memorial hospital is convinced not only of the value of radiation in combination with surgery but also of the value of irradiation as a promising method of treatment in those cases which are considered inoperable. Of 37 cases treated by external x-radiation and interstitial radon, 12 or 36 per cent are living over five years. Of 137 cases treated by combined irradiation and surgery, 40 per cent are living over five years. The results of surgical treatment for cancer of the breast have been definitely improved at the Memorial hospital since combined with irradiation. Lee, and his co-workers have made intensive study of the problem of efficient irradiation of the breast, but their results of treatment are still too recent for evaluation on the basis of two or five-year cures.

All cases of cancer of the breast should be examined for metastases to the chest, spine, pelvis including the upper femora, and skull before proceeding with operation. Lenz has reviewed 168 cases of metastatic breast cancer. He emphasizes the effectiveness of moderate doses of x-ray therapy in the prompt relief of pain from skeletal metastases and great improvement of symptoms referrable to metastases to the central nervous system. Of 31 cases showing areas of bone destruction, 14 cases showed recalcification of bone The only cases which failed to show definite improvement were in the terminal stages of the disease, and even some of these improved. Lenz records 2 cases that were moribund at entrance, and yet one became clinically well for 27 months and the other for 36 months following x-ray therapy. Adair records parallel experiences from the Memorial hospital.

The Registry of Bladder Tumors records about 14 per cent of its cases treated by surgery, fulguration, and irradiation to be symptom-free after five years. Dean and Quimby, reporting on 95 cases of cancer of the bladder treated at the Memorial hospital by the interstitial implantation of radon, find 36 cases, or 38 per cent, free from symptoms after three years. The operative mortality was only 3.7 per cent by this conservative method as compared with a general operative mortality of 10 to 20 per cent with radical surgery alone. All 95 cases were diagnosed histologically as well as clinically. Of 44 cases of infiltrating carcinoma of the bladder, which would ordinarily require radical surgical resection, 31.8 per cent, or 14 cases were free from symptoms after two years. Barringer reports 46 cases of carcinoma of the prostate diagnosed histologically and treated by interstitial radium therapy, with 5 cases free from symptoms after five years or more. One case dying seven years after treatment showed no evidence of carcinoma at autopsy. Dean and Crile advocate the pre- and post-operative irradiation of kidney tumors, but find no record of a tumor of the kidney having been cured by radiation therapy alone. Carcinoma of the penis appears to yield as good results by conservative surgery and irradiation as by radical surgery. Maddick, in a review of 60 cases, finds 7 to be well after five years. Of these, 3 had been treated by operation and radiation, 2 by x-ray alone and 2 by radium alone. Pfahler, in a review of 10 cases of his own treated by electrocoagulation and radiotherapy, reports 4 as free from disease for five years or more. Proper treatment of carcinoma of the penis or of the vulva should include thorough irradiation and possibly surgical removal of the inguinal glands. Some malignancies of the testicle are unusually radiosensitive, but radiation should be used in conjunction with surgery in all operable tumors of this organ.

Carcinoma of the rectum has entered the field of radiotherapy as has cancer of so many other regions through obtaining successful results in the treatment of inoperable, and later, of borderline cases. Neuman and Coryn, in treating 59 cases, of which 46 were inoperable. or borderline, report 20 per cent cured over a period of three years. Their general conclusions have been that efficient irradiation, using proper surgical access may cure many borderline and inoperable cases, and render some of the inoperable cases operable. The only operable group in which Gordon Watson believes radiotherapy to be warranted consists of patients under 30 years of age, with a very malignant tumor in which surgical cure is very rare. Gordon Watson advocates the treatment of radiotherapy of all squamous cell carcinoma of the anus without deep infiltration. The only failure he records is in the first case treated and this was subsequently cured by excision. The advantage of radiotherapy over surgery is the avoidance of a colostomy and of injury to the sphincters.

Treatment of carcinoma of the gastro-intestinal tract below the hypo-pharynx and above the rectum has yielded practically no cures. The most that has been attained is the temporary opening of obstruction or relief of difficulty in swallowing. Radiotherapy is worth while trying before proceeding to the more distressing experience of a gastrostomy in the case of carcinoma of the esophagus and cardiac orifice of the stomach. The upper abdomen is poorly adapted to radiotherapy, due to the compact relation of numerous vital organs and the dangers of peritonitis with radium implantation. Surgery offers the only generally acceptible method of treatment of carcinoma of the stomach and intestines.

Carcinoma of the bronchus has been improved symptomatically and life prolonged by radiotherapy, but the accorded arrests of this disease are so few that radiotherapy can promise no cures at this time. Tyler reports one case living four years after treatment by deep x-ray, local radium and coagulation. Carcinoma of the thyroid can be offered some prolongation of life, and in most cases, more or less relief of dyspnea. Haagensen, in a review of the literature finds no consistent report of cures, although Forssell in 1924, and Hintze in 1930 promised 10 to 15 per cent of their cases would show five-year cures.

Various neoplastic changes are grouped loosely in the literature under the heading of sarcoma. While the great bulk of these lesions are malignancies of mesenchymal origin, some benign tumors of mesenchymal origin, as well as varying numbers of extremely malignant carcinomas showing an anaplastic cell-type are included. Hintze, in summarizing 1000 cases of sarcoma at the university clinic in Berlin, reports 25 per cent of cases treated by radiation alone, to be well after five years as compared with a group treated by a combination of surgery and radiation of whom 39 per cent were well after five years. Rozsa, in reporting 129 cases of varied sarcomata, finds 14.6 per cent five-year cures in irradiated cases. The preferred treatment of sarcomata appears to be pre-operative and post-operative irradiation with surgical removal of all localized lesions and radiation alone of cases in which cure by surgery seem remote due to regional infiltration and distant metastases or in which local intervention has been shown inadequate due to the systemic nature of the disease, as in the lympho-blastomata and leukemias.

Radiotherapy is definitely indicated in certain types of bone tumors. It is generally conceded that x-radiation alone is preferred treatment in those tumors which tend to occur in multiple areas, such as metastatic carcinoma, multiple myeloma and even the alveolar round-cell sarcoma of Ewing. The osteogenic sarcomas warrant treatment by radiation pre- and post-operatively, with irradiation over the chest in those cases in which amputation or resection are considered. Pfahler and Holfelder are the only therapists who promise permanent results from radiotherapy equivalent to the results from amputation. It may be that the apparent ineffectiveness of radiotherapy as a cure for osteogenic sarcoma by the average radiotherapist results from a failure to deliver an adequate dose of radiation into the tumor itself. Even moderate doses of properly administered x-ray therapy will give relief of pain, shrinkage of the tumor, increased calcification, and in many cases, restoration of normal use of the extremity even though the patient ultimately dies from a dissemination of the neoplasm. Herendeen of the Memorial hospital advocates treatment of giant-cell tumors of bone by x-radiation in the light of an experience with many cases treated successfully by x-ray at the Memorial hospital and the frequency of recurrence following curettement alone. All benign osteo-chondromata are to be treated by surgical excision.

X-ray therapy is of established value in the treatment of certain intracranial tumors, particularly in the solid adenoma of the anterior lobe of the pituitary gland. Hare and Dyke, in reviewing 20 cases of pituitary tumors treated by roentgentherapy, found headache relieved in 75 per cent of the cases, and vision definitely improved in 25 per cent of the cases. Cushing found vision improved in only 42 per cent of cases following transfrontal operation. Hare and Dyke recommend a trial with x-ray therapy in all patients with adenoma of the pituitary, excepting those cases showing rapidly increasing intra-cranial pressure or in whom there is imminent danger of optic atrophy. If x-ray fails, operation is advised. Bailey and Sosman found that the gliomas respond less favorably to x-ray therapy, except for the medulloblastomas which react to radiation much like lymphoblastomas, showing a spectacular initial regression with subsequent recurrence. Zollinger and Cutler recommend operation in all operable brain neoplasms except adenomas of the pituitary. Operation is indicated in order to establish a diagnosis, to remove all operable lesions and to provide a decompression as a safety valve for the postradiation edema. The meningiomas and certain acoustic neuromas are amenable to cure by surgery.

Patients suffering from Hodgkin's disease, lymphosarcoma and leukemia can be benefited far more by x-ray therapy than by any other form of treatment. The enlarged lymph glands and splenomegaly can be painlessly and effectively reduced in size with relief of mechanical interferences. This may relieve the crowding of adjacent organs or more particularly, reestablish drainage through the obstructed venous and lymphatic channels. Edema of the extremities may subside and fluid be resorbed from the peritoneal and pleural cavity. The patients general condition is most effectively improved as evidenced by a return of the temperature to normal and a replacement of languor and malaise by a feeling of general well-being. Minot and Isaacs, in a study of 78 cases of myelogenous leukemia treated by x-ray, found all but 5 per cent to be symptomatically improved with 50 per cent being symptomatically well for varying periods. Many patients were able to return to their occupation and their efficient life was prolonged at least 30 per cent. Desjardins finds no absolute cures of lymphosarcoma recorded but states that a few cases diagnosed as Hodgkin's disease have apparently been cured following thorough irradiation over the involved nodes. In general the radiotherapist can practically always promise pronounced relief of symptoms in patients with leukemia or lymphoblastoma, but no permanent cure of their disease.

There are many patients with malignant disease who cannot be cured and yet their symptoms can be successfully controlled and their effective life prolonged by proper radiation therapy. Radiation, through its ability to decrease the bulk of tumor tissue, is able to relieve pain, correct paralyses and open obstructions secondary to pressure or constriction from a malignant growth or its metastases. Pain resulting from metastatic or primary malignancy involving bone, with stretching of the periosteum can be effectively relieved and pain resulting from infiltration or pressure on nerve roots as in carcinoma of the uterus can be ameliorated. Paralysis resulting from pressure such as facial paralysis from parotid tumor can often be relieved. Vision may be improved or in some cases restored through the lessening of pituitary pressure against the optic nerves. Obstruction of the passageways of the body due to carcinoma of the esophagus, thyroid or rectum may be opened, and venous or lymphatic blockage by enlarged glands or tumors may be effectively relieved with elimination of edema or ascites. Infection and necrosis of sloughing, fungating tumor masses is lessened. Areas of bone destruction undergo recalcifacation, thereby increasing the strength of the bone and decreasing the possibility of pathological fracture. The patient's general condition improves as a result of these many benefits, and as the result of systemic effects which are not well understood, as in the case of leukemia. The nursing care of many patients is greatly simplified and some patients may even return in comfort and usefulness to their original occupation. Cases that have been considered inoperable may be rendered operable, and a few cases which were considered as hopeless, may ultimately remain cured.

The uncertainty of prognosis in individual cases of malignancy treated by radiotherapy is well known and results from many factors. The extension and dissemination of the disease cannot be accurately determined. The more extensive the disease, the less is the chance of cure, regardless of the method used. It is important to choose that method of therapy which is best adapted to the individual case. This may call for surgery, cautery, radium or x-ray, or a combination of any or all, depending upon the particular site, extent and nature of the lesion in question as well as on the patient as a whole. One must also be guided by the availability of the efficient methods of therapy, whether they be surgical or radiological. The preeminent principle in all radiotherapy is to deliver the radiation homogeneously throughout the tumor in a dosage adequate to cause its eradication with the least possible damage to the adjacent normal tissues. The methods of radiotherapy are all built about this principle and the technics are devised to carry them into practice. One must consider that in general, the results which have been reviewed relative to the cure of malignant disease by radiation, are the accomplishments of men who are seasoned masters in the art and science of radiotherapeutics. Radiotherapy, like surgery, may be a very dangerous and inefficient weapon, if used with insufficient care and knowledge.

The responsibilities in diagnosis and care of patients with malignant disease are so varied and profound as to commonly demand the collaboration of various doctors. The responsibility for early diagnosis and the burden of the medical care of the patient rests with the general practitioner and family doctor. The responsibilities of the pathologist call for an accurate opinion regarding the biology and the natural history of the particular lesion under consideration. This opinion will have much to do in determining the therapy chosen. The place of the surgeon in the treatment of cancer is well established, both as a consultant and therapeutist. The radiologist at the present time sees more patients with malignant disease than any other individual doctor and must train himself to accept this heavy responsibility. Many procedures in special radium therapy must be carried on in close collaboration with a surgical specialist or skilled general surgeon unless the radiologist is a cancer expert who has been trained thoroughly in surgery as well as in radiotherapeutics.

It has been shown that radiotherapy gives spectacular cures in some cases remarkable palliation in others, and little or no lasting improvement in a further group of cases. There is no panacea for malignancy at the present time, and the treatment chosen must be fitted to the individual case and to the availability of efficient methods. It is foolhardy to push any means of therapy beyond its limitations and it is equally poor practice to ignore benefits from any form of therapy when its merits are well established.

(Bibliography in Reprints)

(II) DEEP X-RAY THERAPY FOR FIBROIDS AND UTERINE HEMORRHAGE*

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Uterine fibroids have been the object of careful study since the fact was recognized that it was possible to reach practically any depth of tissue with penetrating radiations of roentgen rays.

These tumors possess striking characteristics easily recognizable, and the presence of malignant changes can be excluded by pelvic palpation with thorough curettage and microscopical examination. With few exceptions they are benign, causing no symptoms at all, or producing only a multitude of complaints.

Uterine fibroids are more common after the age of forty but are not unusual during the third decade and occasionally are met with in younger patients. They tend to produce sterility and vary in size and rapidity of growth. The large abdominal tumors rarely cause the excessive hemorrhage usually accompanying the small types, but, in any case, they are prone to prolong menstruation and there is a tendancy for them to cease growing and to decrease in size with the menopause. In rare instances they even disappear.

Hyaline changes, with areas of calcification, are not uncommon, and in the larger tumors cystic or abscess formation may be encountered. Sarcomatous degeneration, for which there is no cure by any method of treatment, is exceedingly rare, while malignant changes of the endometrium and cervix are often present but with no greater frequency than in normal uteri.

The following is a brief outline of changes in the tissues from the use of x-ray:

1. The fibroid tumor cell, by successive steps, is obliterated and replaced by young connective tissue(1).

2. Ovarian stimulation is inhibited, probably by the effect, first, on the ripened graafian follicles, the ripening follicles, and last, if the ray is continued long enough, on the primordial follicles, and interstitial tissue(2).

3. X-ray has a direct influence on glandular tissues. The utricular glands and the glands of the cervix uteri soon become less in size and function. This is also brought about through the effect on the ovaries(3).

4. In the blood vessels x-ray produces an edema of the endothelial lining of the capillaries, which causes an endarteritis obliterans, thus limiting the too abundant blood supply(4).

5. The internal secretions, under the small ovarian dose, seem not to be affected, as the interstitial tissue and the corpus luteum are the last to be influenced(5).

That x-ray treatments affect the follicle apparatus and destroy it. That bleeding due to fibroids or to essential hemorrhage can be absolutely controlled by the x-ray(6).

Judging from the above histology, the artificial menopause induced by the x-ray cannot be differentiated from the normal menopause(7). X-ray therapy is indicated as follows:

1. Fibroid tumors of the uterus, except the pedunculated submucous type, or those showing degeneration.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

2. Functional menorrhagia, and metrorrhagia of adolescence.
3. Menorrhagia and metrorrhagia without evidence of gross pathology and most commonly observed in the fourth decade.
4. Menorrhagia and metrorrhagia due to metritis or endometritis of a hypertropic or polypoid nature.

There is a large group of patients with fibroids, whose hemoglobin is of low concentration and whose resistance is so diminished that they constitute poor surgical risks. Any patient whose hemoglobin is less than 65 per cent should be treated with x-rays no matter how large her tumor or what complications may be present. The operative mortality is so high in anemic patients that hysterectomy is not justified, especially since we have so efficient a method of controlling hemorrhage as radiation(8).

A second positive indication for x-ray treatment is any constitutional disease which renders the patient a doubtful surgical risk. Treatment with x-rays, if not curative in themselves. will build these patients up so that they are more suitable for subsequent operation.

When there is some complicating lesion requiring surgery for relief, this form of treatment should be used only as an adjuvant; for instance, to check hemorrhage.

A complete pelvic examination should be made in each case before x-ray treatment is decided upon.

The most favorable time for treatment is soon after the menstrual period. The bowels should be cleared, and the patient kept on a light diet during and after treatment.

A fibroid uterus the size of a five months pregnancy will not be palpable above the symphysis, and will be but little above normal size after treatment. The full effect will not be realized for at least a year. Several cases subjected to radiation have later given birth to healthy children.

I recommend that these patients be hospitalized and given deep x-ray treatments each day, in such a manner as to deliver into the fibroid the maximum dosage, that we have learned from experience is the most effective, and at the same time without injury to the normal skin or superficial tissues. To accomplish this I am using the crossfire plan both anterior and posterior in such a way that a homogenous irradiation is had in the body of the fibroid. The division of the total dose, and the number of treatments given, vary with the type of lesion, and the condition of the patient being treated.

The diet should be carefully regulated and a general-check-up of the gastro-intestinal tract is worthwhile.

The hospital is so arranged that these patients can be placed on the roof and given full benefit of the sun bath. The patients seem to appreciate this, and it is a valuable aid in building up their resistance.

After it had been demonstrated that the roentgen-ray treatment of mild gynecological lesions was capable of giving relief without surgery, many gynecologists took up this work and developed a technique for the use of radium. While similar results to those obtained through roentgen-ray therapy may be obtained by the intrauterine use of radium, in many of these cases, I believe, there are reasons why roentgen-ray therapy should be the treatment of choice. Where radium is used an anesthetic is necessary. Pronounced radiation sickness follows the use of radium, while with our heavy filtration this has been eliminated. Many of these patients have irritability of the bladder and rectum, and pelvic pain. Also a leucorrhea lasting for weeks. In young women, because of the fear of inducing the menopause, a single application of radium is not enough to give relief. The danger of activating a latent infection is greater with radium.

The glandular treatment of women passing the menopause cannot be overestimated. and must be worked out carefully.

Ten years ago x-ray was given only to women who had passed the age of fifty, for x-rays sterilize the reproductive cells, while stimulating the interstitial cells, but there has been great development since then, and women of thirty, worn out by hard work, illness, or nervous and mental strain, are successfully reactivated in both body and brain.

The declining years of women are more fraught with tragedy than those of men. Modern endocrine reactivation treatments can be a blessing for many unless false and exaggerated hopes have been raised. The reactivation of vital functions can result in greater comfort and efficiency, and a much better enjoyment of this period of life assured.

CONCLUSIONS

1. Following radiotherapy with heavy filtration of the x-ray, there can be promised a satisfactory shrinkage in 90 per cent of the fibroids so treated, the results being more satisfactory in masses of moderate size.

2. In addition to the beneficial effects of roentgen therapy on the gross pathology discussed in this paper, we now confidently expect to establish a reparative circulation, which leads to softening of indurations, to reduction of old inflammatory exudates, to correction of parametric lesions, to modifications of adhesions to such extent that the pelvic viscera are freely movable, and in many cases displacements are remedied. All these to the credit of roentgen therapy.

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(III) THE PRESENT STATUS OF RADIATION THERAPY. ESPECIALLY LOW VOLTAGE THERAPY*

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The present status of radiation therapy is undoubtedly a much improved status over what it was a few years ago. An accumulation of observations by the men who refused to be discouraged with this type of work has led to a better clinical understanding and an increased knowledge of the physics involved, particularly in filtration and radiation measurements with the introduction of the r unit, all have added greatly to our technical knowledge. The result of this has been greater improvement in conditions treated and fewer of the undesirable post-irradiation sequelae or radiation accidents which were embarrassing to the radiologist, the referring physician and extremely unfortunate to the patient and his family. With our increased knowledge has come the realization that some lesions may be successfully treated with low voltage therapy. while many require high voltage therapy and as yet some still fail to respond to any of the present methods of applying radiation.

The knowledge of the fact that to successfully treat the deeper lesions, due to the more radio-resistant types of pathology, requires the high voltage machines, the average man possessing a lower voltage machine has been discouraged from giving any treatments, even for treating those lesions of a more radio-sensitive character.

In the few minutes alloted today, we would like to discuss this problem from a two fold angle, first the technical and second the clinical. In this technical portion, one must consider the apparatus found in the average office which was purchased solely with the idea of employing it as an aid in diagnosis.

The first point I would like to make is that this apparatus has considerable range for therapy purposes and the second point is that if one keeps in mind a few fundamentals there is no great danger in using this equipment for this purpose and the third point is that the technical knowledge required to successfully work in the low voltage therapy field may be easily acquired by the average practitioner. In the main there are three groups or types of apparatus found in the general practitioner's office.

The first in this group is the everyday so-called 5-30 mobile unit which will give from 40 to 90 kilovolts though purely a diagnostic piece of apparatus it has some value for therapeutic purposes.

In the next heavier type of diagnostic apparatus we find a commonly used unit, the so-called 100-100 type. This is the present day equivalent of the old seven inch machine and for therapeutic purposes will probably range up to 110 kilovolts. The next type is the ten inch apparatus which has a maximum of about 140 kilovolts for therapeutic purposes. The above three types of equipment are primarily diagnostic units and this fact accounts for their presence in the average doctor's office. However, all of these machines are more than diagnostic units, and I shall attempt today to discuss the therpeutic possibilities of each type leaving the so-called deep therapy field to those who have made it a special study and devote their entire time to Radiology. The specialist alone is required to purchase these heavier machines which are good only for therapeutic measures.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

That every one practicing medicine should have an active interest in radiation therapy, is easily proven by the following chart (Figure No. 1):

FIGURE I

The Six Major Pathological Groups.

1. Mechanical or Traumatic: Fractures, dislocations, etc. minus.
2. Chemical or Metabolic: Toxic Goiter, etc. plus.
3. Infectious and Inflammatory: T. B. Glands, Gas Gangrene, etc. plus.
4. New Growths: Benign and Malignant. plus.
5. Unclassified: Hodgkin's, Leukemia, etc. plus.
6. Mixed Lesions: New Growths with infections, etc. plus.

The above basic types of pathology encountered in everyday practice are fairly comprehensive. The fact that x-rays are used successfully as an aid in treatment in five out of six of these groups is a true indicator of its present status in therapy.

which shows the six major groups of pathological conditions met with everyday and a plus or a minus at the end of a each group serves to indicate whether or not radiation therapy is of any value in that particular group.

However the diseases shown in figure one include many conditions requiring more than 140 K. V. so we will endeavor to further sub-divide this pathology into the superficial and deep; radio-resistant and radiosensitive lesions, selecting the more radio-sensitive type of lesions as suitable for treatment with the lower voltage apparatus generating the relatively longer wave lengths.

It would be a mistake to place all superficial lesions in the group responsive to the lower voltages because of the tendency of some of these lesions to metastasize early in which case they are not truly superficial lesions. Neither would it be right to neglect to include some of the more deeply situated but radio-sensitive conditions, since it is possible to screen out with the proper filter much of the dangerous longer wave lengths while still delivering a sufficient number of short waves to secure the desired results even at some depth when the lesion is quite radio-sensitive. (Figure No. 2):

This figure shows twenty different x-ray settings any of which may be obtained from the

FIGURE 2

No.	K. V.	Filter	Distance	R. per min.	Total R.	Ma.	Time	Size of port				Conditions treated.
1	80	0	10 inches	....	400	2.	4 min.	....	Unit 3—140 K. V.	Unit 2—110 K. V.	Unit 1 90 K.V.	Acne, boils, carbuncles, gas, gangrene, erysipelas, ring worm, psoriasis, eczema, enlarged thymus, paronchyia, acute sinusitis, surgical mumps.
2	80	0	15 inches	....	400	2.	8 min.	....				
3	80	1 mm. Al.	10 inches	....	450	5.	....	....				
4	80	1 mm. Al.	15 inches	....	450	5.	....	....				
5	100	0	10 inches	....	450	2.	5 min.	....				
6	100	0	15 inches	....	450	2.	10 min.	....				Lupus vulgaris, keratoses, early actinomycosis and blastomycosis, neuro-dermatitis, pruritis, leukoplakia, small moles and warts before removal, pertussis.
7	100	½ mm. Al.	10 inches	....	450	5.	4 min.	....				
8	100	1 mm Al.	10 inches	....	500	5.	10 min.	....				
9	100	1 mm. Al.	15 inches	....	500	5.	20 min.	....				
10	100	3 mm. Al.	10 inches	....	500	5.	....	....				
11	100	3 mm. Al.	15 inches	....	500	5.	....	....				
12	120	½ mm. Al.	10 inches	....	500	5.	2 min.	....				
13	120	1 mm. Al.	10 inches	....	500	5.	5 min.	....				Basal cell carcinoma, Hodgkin's disease, hyperthyrodism, menorrhagia, lymphatic and myelogenous leukemia, late actinomycosis and blastomycosis, all diseases of bones, swellings of glands, etc., where the diagnosis is obscure. T. B., peritonitis, neuritis and for pain due to late malignancy. Rodent ulcer, chronic sinutis.
14	120	1 mm. Al.	15 inches	....	500	5.	10 min.	....				
15	120	3 mm. Al.	15 inches	....	550	5.	....	....				
16	120	5 mm. Al.	20 inches	....	550	5.	....	....				
17	140	1 mm. Al.	10 inches	....	500	5.	4 min.	....				
18	140	5 mm. Al.	15 inches	....	550	5.	20 min.	....				
19	140	½ mm. Cu. 1 mm. Al.	20 inches	....	600	5.	3 hrs.	....				
20	140	1 mm. Cu. 1 mm. Al.	15 inches	....	650	5.	5 hrs.	....				

various types of diagnostic equipment in common use with the kilovoltage ranging from 80 to 140. The filter ranges from no filter up to 1 mm. Copper and 1 mm. Aluminum. The distance varies from ten to twenty inches. In those instances where no filter is used 2 Milliamperes of current are employed. All other settings are for 5 Milliamperes. The time varies from two minutes to five hours depending on the voltage, filtration and distance.

The first type of apparatus the 5-30 mobile unit gives from 40 to 90 K. V., and this enables one to treat any of the conditions listed in the bracket indicated as Unit 1. In the second bracket indicated as Unit 2 are listed additional conditions which may be treated with current ranging up to 110 K. V., while the larger bracket indicated as Unit 3 will permit the treatment of still a greater number of conditions and includes in its range those listed in bracket 1 and bracket 2.

From this chart it is evident that a great number of commonly found conditions are within the therapeutic range of various diagnostic apparatus commonly used for diagnosis only by many of the general practitioners in our community. It is not the purpose of this short paper to make it possible for one to give these treatments, but it is to call to the attention of the practitioners who are not availing themselves of this use of their equipment, some of the simple facts controlling x-ray dosage. There is nothing mysterious or difficult about it and anyone willing to spend a little time will soon be able to successfully and safely treat the lesions listed on this chart.

Many of the more radio-resistant and all the hopeless diseases were deliberately omitted as it is no use listing conditions which those with better facilities have difficulty in securing only limited success. Even with our present excellent 200 K. V. apparatus of today and our better knowledge of depth dosage we still owe a lot of our success to the fact that we get a great amount of help from the internal use of heavily filtered radium. In these deeply situated malignancies radium alone is unsatisfactory and deep therapy alone is unsatisfactory. It is only by properly combining the affects of the two that we are able to secure any lasting results.

So far we have considered three types of apparatus, the mobile 5-30 unit with a maximum of 90 K. V., the seven inch or 100-100 unit with a maximum of 110 K. V., and the 9 to 10 inch machine or 140 K. V. unit. We have further contended that x-radiation is an essential aid in the treatment of many lesions falling in the various major classifications of disease both superficial and deep, benign and malignant.

This brings us to a consideration of the characteristics of the x-rays and how the beginner is to safely handle them in his work. (Figure No. 3, x-ray characteristics). This figure shows all the characteristics and the question which is of the greatest importance in therapy could easily lead to a long argument.

FIGURE 3

Characteristics of X-Rays.

1. Ability to penetrate objects opaque to ordinary light.
2. Ability to cause a chemical change in the emulsion of unreduced photographic film.
3. Ability to cause fluoresence when striking certain crystals.
4. Ability to produce biological change in living cells.
5. Ability to cause ionization (rendering gases conductive to electricity).

Anyone who is using the x-rays as a therapeutic aid must always bear in mind that the primary beam is a heterogenous type (Figure No. 4) of radiation containing many varied wave lengths with the predominating wave length as well as the minimum wave length dependent upon the voltage used. (Figure No. 5):

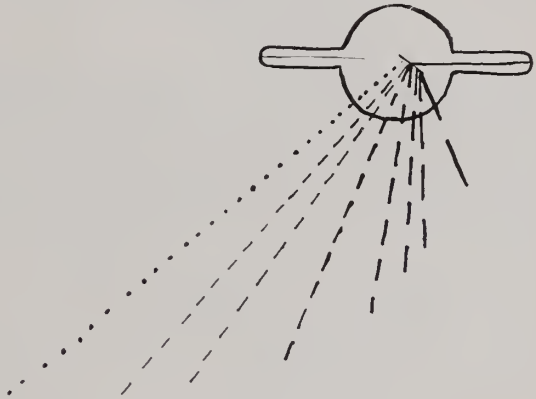

FIGURE IV

Figure IV shows the value of distance in eliminating the longer, less penetrating x-rays from the primary x-ray beam.

The inverse square law, which states that the effective radiation varies inversely as the square of the distance, is also a factor in this calculation.

This figure also shows the heterogeneous character of the primary beam, illustrating seven different wave lengths in this instance.

FIGURE 5

Type of Rays	K.V. maximum	Point gap in.	Minimum Wave Length Angstrom Units
Very Soft	40	1.5	.310
Soft	80	4.36	.155
Medium	120	7.81	.103
Hard	160	11.1	.077
Very hard	200	14.1	.062

This table shows the relationship between the penetration, voltage and minimum wave length. (KAPLAN).

These figures have been taken from Kaplan's book(1) on "Radiation Therapy," in which he shows that the penetrative power of the x-rays will depend upon its energy and as this energy is inversely proportional to the wave length, the higher the voltage, the shorter the wave length and the more penetrating the ray. Rays that have a high penetrative power are called hard rays and are short, while soft rays are those of low penetrative ability and are long. This table shows the relation between (penetration) voltage and minimum wave length.

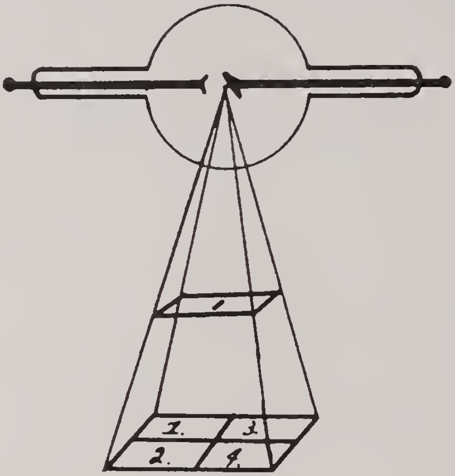

FIGURE VI

The above figure serves to illustrate how the primary beam scatters as it proceeds farther from the target. The square closest to the target is of the same size as the four lower squares, but due to its proximity to the target it is receiving the entire primary beam, while the lower four squares, which are twice the distance from the target as the nearest square, divides this primary beam into four equal parts.

This is a graphic demonstration of the law that to double the distance reduces the quantity of rays striking a given part to one-fourth of the original beam. Therefore, to make up for the distance one must give four times as much time or four times as many milliamperes.

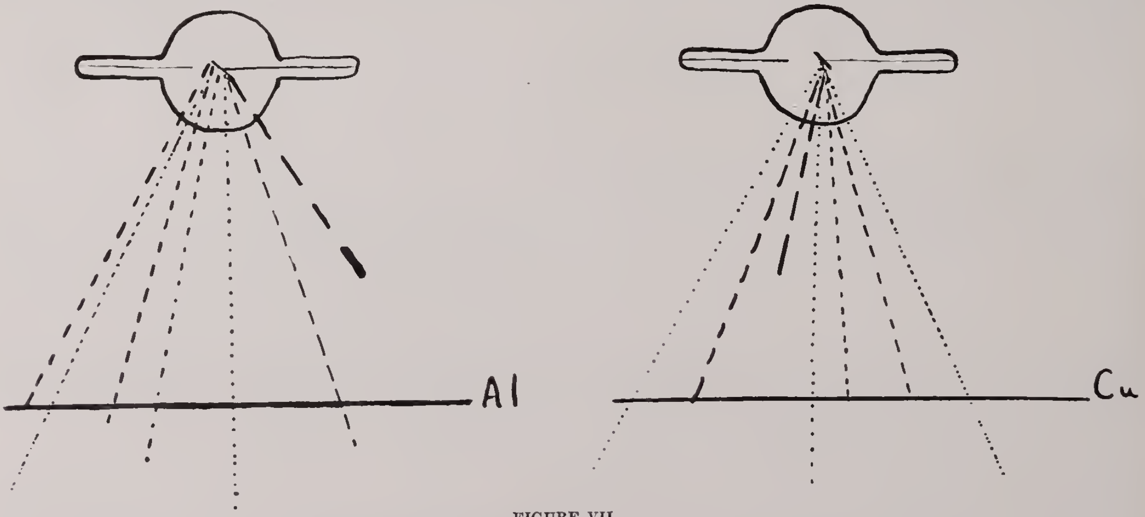

FIGURE VII

The heavier the filter the more homogeneous the radiation.

The above figure serves to illustrate the difference in the absorptive power of two different commonly used filter materials. The heavier copper material eliminates a great many of the longer wave lengths from the primary beam and leaves a more homogeneous type of radiation; while the lighter aluminum allows a much greater variety to pass and the resultant beam contains many longer wave lengths which may be absorbed by superficial tissues.

In this table one sees listed 40 K. V., 80 K. V., 120 K. V., 160 K. V., and 200 K. V. and the minimum wave length to be found in the x-ray beam generated with each kilovoltage. Since we know the shorter the wave length the greater the power of penetration, it is immediately apparent that to treat a deep seated lesion one must possess an apparatus capable of generating a relatively shorter wave length. In addition to an understanding of voltage one must also consider five other technical factors namely: Milliamperage, time, distance, filter, and the size of the portal of entry.

Milliamperage and time are relatively simple to understand as both may be read by anyone able to read a meter or tell the time on a clock and they require no further discussion. Distance, however, and the selection of filter are far more important than one realizes unless he has had long experience with the work.

The inverse square law applies in therapy as in radiography and as one increases the distance of the patient from the target much radiation is lost because of dispersion (Figure No. 6). This is well demonstrated by this figure in which the square nearest the target is shown receiving the entire beam of radiation while at twice this distance from the target this same beam is shown covering an area four times this size. From this it is evident that each single square at the increased distance receives only one fourth the amount of radiation received by the nearest square. If we grant that the closer square receives 100% radiation, then each similar square below receives but 25% radiation which bears out the statement that if you double the distance you get only one fourth as much radiation in a given area.

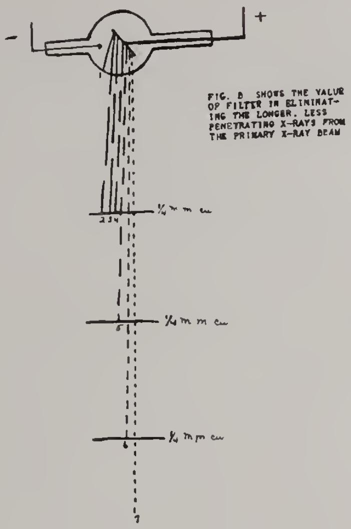

FIG. 8 SHOWS THE VALUE OF FILTER IN ELIMINATING THE LONGER. LESS PENETRATING X-RAYS FROM THE PRIMARY X-RAY BEAM

Therefore. if each of the four lower squares were to be given the equivalent of 100% received by the nearest square one must increase the milliamperage by four or the time by four. In addition, distance in itself tends to eliminate the longer wave lengths (Figure No. 4) but the real elimination of the undesirable longer (caustic) wave lengths is accomplished by the selection of a proper filter (Figure No. 7). The amount of filter is also important (Figure No. 8). The size of the port is of importance and at least one must know that the larger the port the greater the amount of back scatter and the more effective the radiation or in other words the quicker an erythema is produced.

Since we know that the lower voltages produce an excess of the longer less penetrating wave lengths and these longer wave lengths are further retained in the primary beam by light filter or no filter and the closer the object to be treated is to the tube, the greater the number of these long wave lengths strike the part, it is obvious that for superficial pathology this is the desirable procedure while for deeper pathology the opposite is true and one must use the heavier voltage, the heavier filter and the greater distance.

FIGURE 9.

A. The Technical Factors Involved are:
1. Voltage
2. Milliamperage
3. Time
4. Distance
5. Filter
6. Size or Portal
B. The Principal Clinical Factors Involved are:
1. Size, Duration and Location of the Growth.
2. Its Position in Relation to Adjacent Normal Structures.
3. Its General Character, Type and Grade of Malignancy. That is, Whether Radiosensitive or Radioresistant, etc.
4. The General Condition of the Patient, Age, Degree of Anemia, State of Nutrition, Complications and Associated Diseases, etc.

The above group of factors shows the principal technical factors and the principal clinical factors one must take into consideration when attempting to give x-ray treatments either superficial or deep.

With these general principles in mind it is only necessary for one to learn the amount of radiation for a given setting from his apparatus which constitutes a saturation dose—that is the maximum amount of radiation which may be given in a certain time without necrosis or other undesirable changes in the normal adjacent or overlying tissues. He must know this saturation point lest he give more than that amount; but in many conditions he need not give this amount to secure the desired result. What he must do is to learn the voltage settings available on his machine, allowing one setting for each 20 K. V. variation starting with 80 K. V. which is about the lowest kilovoltage of general practical value.

SUMMARY

The fundamentals of radiation therapy as applied to the more superficial and more radiosensitive lesions are not difficult to master and if one is willing to treat the responsive lesion as classed according to the range of his equipment he should have no trouble and do much good. He should treat no lesion which required an excessive number of erythema doses in a short space of time. A calculation of tissue saturation is especially easy in the superficial lesions and with this clinical grasp of the subject confidence is quickly gained.

Before therapy is undertaken an accurate test of the apparatus at the different settings one wishes to use must be made by a service man trained in the work. A sphere gap to check the voltage and an ionizing chamber to register the unit output per minute is quite essential for one's peace of mind as well as one's success. There is still much to be learned in radiation therapy, but much has been learned since the average practitioner left school and all of this information is easily available to those who are interested.

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Violent exercise after forty is especially harmful if you do it with a knife and fork.—Vancouver Sun.

ILLUMINATION AND HEADACHE*

(A DEMONSTRATION OF LIGHTING METHODS)

L. B. BUSHMAN, M. D.,
Omaha, Nebraska.

I have been interested for several years in this matter of illumination—not from a scientific or engineering standpoint, but in our practice of taking care of eyes. We have people complaining of headaches. We know an eye strain due to astigmatism or muscle imbalance does cause headaches.

Many school children complain of headaches. especially when they try to do close work. These children have been examined by the school nurse, who sends these youngsters to us complaining of headaches. We go over their eyes, and so often it happens we find no error of refraction. If we do, it is so small it would harly account for the symptoms of which they complain.

Again we find some older folks who come in. We have taken care of their eyes for years. They wear glasses, and yet they still complain of headaches. It is on account of these complaints saying the glasses do not fit and insinuating you have done a bad job, that I tried to figure out what might be responsible for these complaints.

I have found it is a question of the lighting facilities, both with children in school and with older people. Take men reading and women sewing in the evening, and they complain of eye discomfort. We have very little time on this subject, but I wish to speak of the kind of illumination that is proper, and show the kind that is not proper. I wish to devote myself to the matter of close illumination.

We are indebted to the Nebraska Power Company for this display of lighting. I want to show the particular kind of globes used and what happens with these different lights. What actually happens that causes discomfort is the glare. Take that away and give a sufficient amount of lighting, and as a rule there is no question the eyes are rested. I want to show what glare means. (Shows card). There is some printing on this card. It wipes out the whole picture when the light is too bright and the glare strikes the eyes.

I have a number of *"Archives of Ophthalmology"*, which is a high-brow publication. I presume the paper stock used in this publication is the finest they can get. At the same time, it is the worst you can have for reading. It has too high a gloss. Here is a sheet with less gloss. We have what is called direct illumination, and we have indirect. (Shows type of direct illumination with reflector). We deceive ourselves when we use a reflector and think we are protecting our eyes. As a matter of fact, take this very fine *"Journal of Ophthalmology"* and read it and you will get a glare which reflects into the eyes, so you have eye discomfort.

If you take a newspaper or light reading matter, you go right through it. When you have a medical journal and read an article you concentrate, because you are analyzing what you are reading, and it takes more eye attention. If you have to fight a glare, it will tire your eyes.

Here is a blue bulb—sometimes called the daylight bulb—which is supposed to be a fine light to do away with glare. You are not doing away with the glare, but cutting off the supply. When I switch on this light. with a clear bulb, you get a flash which is blinding. You have other kinds of illumination. This one produces a color on your page. (Switches on light in flame-colored globe). You get a reddish color which affects the reading and disturbs the vision as well.

(Shows blue light of 100 watts and clear light of 60 watts.) The 60-watt bulb will give as much light as the 100, because there is loss of light in the colored globe.

(Turns on indirect light in floor lamp.) Of course, this ceiling is too high for this. It is intended more for the home. (Switches on direct light in another floor lamp.) You see this gives a glare, while the indirect is a diffused light that will spread all over the room.

If you contract sharks want to improve your game, use an indirect light. Playing cards are smooth and glossy, and it bothers you to look at the cards. They have a bridge lamp, but it is a direct light and hangs over the table. If you will use the indirect that throws the light to the ceiling and makes it as nearly white as possible, you will get a soft light that will please the eye, and you will have no difficulty with headaches.

DISCUSSION

GEORGE B. POTTER, M. D., (Omaha): I think the subject of illumination is one that is very important, and one in which physicians should be interested, because not only the oculist, but every physician, is called upon frequently because of complaints of headaches; and there are so many causes for headaches it behooves us to be on the alert and think about the various causes of these physical complaints.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

I was rather in hope Dr. Bushman would touch on the real cause of those disturbances in the eye. Of course, we know that the visible rays of the spectrum are handled by the eye with comparative comfort, and some of these disturbances you get from reflection are due to changes in light rays. If you get into the longer wave lengths, you get light waves irritating to the retina. That is why they thought they had the secret of the lighting question when they began to work with ultraviolet rays. As you go down these wave lengths, you get into irritating waves again.

Then the matter of exposure of the eye over long periods enters into the question, because the retina will become fatigued. So all these efforts of the lighting engineers are along the right line. I think as physicians we should make it our business to be interested more in these matters of lighting, and make an effort to solve some of these problems.

I have the same experience with patients Dr. Bushman expressed. Stenographers are often compelled to work in an office which is improperly equipped with lighting. Probably this girl sits at a desk with a reflecting top, and a large light in front of her, and she is in a state of irritation from this lighting system. It seems to me that builders should consult with someone about the placing of lights in public and office buildings as well as in the home, because it does cause a great deal of eye discomfort, not only when it produces headache, but it causes more or less of a general fatigue and nervousness the individual cannot describe. He cannot define it, but in going into the question, you usually find that by eliminating this irritant, you make him perfectly happy. It may not be a question of reflection, but of retinal irritation from the light.

JAMES P. RIGG, M. D., (Grand Island): I would like to ask Dr. Bushman's reaction with reference to various types of tinted lenses for the purpose of elimination of glare.

DR. BUSHMAN, (closing): In regard to the tinted lenses, I feel there is at times some indication for them. Personally, I never like to prescribe a tinted lense unless the patient complains of photophobia, or where he is bothered with extreme light. I do not believe the eyes were intended to have their light cut off, bcause it has a certain function in connection with the retina and pigment. But today we have a new economic condition in which we are not living in the country. I am speaking of the cities. There are so many things, such as graveled roads, which we have to contend with in the way of glare and reflection, that in some cases it is absolutely necessary for people to wear glasses with tinted lense. I think in those cases it is all right. As a general routine, personally I am not greatly in favor of it.

I should like to suggest if you are interested in this subject of illumination, your favorite electrician will go to your home with one of these light meters and measure the light, and give you valuable suggestions. I think practically every electrician in your community will have one of these light meters, and it will be worth your while to give this question of illumination a little study. Take an indirect lamp and put it in the middle of your room, and it will light the room up beautifully.

TRICHOMONAS VAGINALIS*

SOPHIA E. WARNER, M. D.,
Arapahoe, Nebr.

When the author of the Practical Medicine Series of 1931 in *Gynecology and Obstetrics* made the statement that there are still many gynecologists who have not seen a case of trichomonas vaginitis, I felt that this would be a good subject to present to our local society. There would certainly be an even greater number of general practitioners who have not seen such a case, or, seeing a case, has failed in the diagnosis.

The term, trichomonas vaginalis, refers to the causative organism and. while an entire paper might be devoted to the discussion of the morphology, habitat, and cultural and biological characteristics of the flagellate protozoan, I feel that all members of this group would be more interested in the pathogenicity of the organism and shall, therefore, devote the time allotted principally to the discussion of trichomonas vaginalis vaginitis.

A profuse irritating vaginal discharge with an offensive odor and an intense pruritis, and, in severe cases a dermatitis or intertrigo, are the symptoms which usually bring the woman with trichomonas infection to the physician. Dyspareunia is also a prominent symptom as pointed out by Dr. Kamperman. Strange as it may seem, the history is not important in a case of this type of vaginitis. The disease has been found in patients of all ages, in virgins, in pregnant women and in women past the menopause. The important thing in these cases is to rule out a specific vaginitis or gonorrhea by the absence of the gonococcus in successive smears made, preferably, immediately following the menstrual period. Then the diagnosis is established by the presence of the flagellate protozoa in a hanging drop made from fresh vaginal secretion.

The examination is readily made in the office of any practitioner. No stains are required. Greenhill states that with practice the trichomonas can be recognized in the stained smear but I have never been able to identify it. In one case which I saw early I found no organisms at all in the stained smear, but a great many leucocytes and the clinical manifestations bore out the patient's statement that she was suffering from a definite condition. A small drop of the vaginal secretion mixed with warm physiological salt solution and examined under the high dry power of the microscope revealed the pyriform or spindle-shaped, flagellate protozoa moving about in great numbers. After the fourth day the stained smear assumed a different appearance entirely. Large numbers of bacteria were then found but this was due to a mixed infection. There is considerable evidence that the organism may be present without producing symptoms much the same as the organism of Vincent may be found in the mouth of an individual who does not have Vincent's angina, and routine examinations of large numbers of pregnant women as well as others have been reported by different authors. Bland, Goldstein and Wenrich (Jan. 17, 1931. *J. A. M. A.*), report the examination of the vaginal secretion of 500 consecutive gravid patients, finding the parasite present in 118 or 23.6%. Only 15% of these complained of local symptoms although almost all experienced an abnormal vaginal discharge.

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*Read before the Southwest Nebraska Medical Society, McCook, Nebr., May 11, 1933.

I recall cases which were kept on observation and treatment at the venereal clinic of the dispensary while I was a student on the service there, in which the gonococcus was never definitely demonstrated and therefore a diagnosis of gonorrhea was not justified and yet clinically the picture was much the same. However, the effects of trichomonas vaginalis are limited to the vagina and the organism can seldom be found above the external os. While it is decidedly more annoying to the patient it does not carry with it the complications which follow an infection with the gonococcus. It is rather interesting to note that gynecology texts published before 1928 make no mention of the organism; neither do bacteriologies in spite of the fact that there is a special chapter devoted to "The Pathogenic Protozoa." Yet Osler makes this statement: "Trichomonas vaginalis, which measures 15 u to 25 u in length has four flagella, as long as or longer than the body, is by no means uncommon in the acid vaginal mucus."

Dr. H. H. Cummings of Ann Arbor, Mich., has this to say about the history of the organism: "Nearly one hundred years have passed since Donné, in 1837, described the protozoa trichomonas vaginalis. Contemporary writers considered these flagellates as harmless parasites, and of no clinical importance. In 1896 George Dock reported the finding of trichomonas vaginalis in a vaginal discharge and N. S. Davis reported a similar case. DeLee in 1920 gave a good clinical picture of this type of vaginitis. However, no general interest in this subject was manifest until 1928 and 1929 when Greenhill and C. H. Davis presented papers, describing a distinct clinical picture of a vaginitis caused by trichomonas vaginalis."

After gonorrhea has been ruled out the smear should also be examined for yeasts and Monilia and even though the trichomonas is found this examination should be made as the two organisms may co-exist. Especially is this true in cases of diabetes and pregnancy.

The treatment of this condition, with which we, as general practitioners, are most concerned is not yet on an established basis. C. H. Davis studied the effect of various germicides on trichomonas vaginals. The agents used were: Gentian violet, mercurochrome, glycerine, methylene blue. alcohol, copper sulphate, lactic acid, Lugol's solution, bichloride of mercury, lysol, potassium permanganate, metaphen, green soap, sodium hydroxide, silver nitrate, alum and zinc sulphate. Of these agents the most effective were: Alcohol, green soap, Lugol's solution, bichloride of mercury, lysol, silver nitrate and mercurochrome. To this already long list may be added such other agents as picric acid, hexylresorcinol, and Neosalvarsan. Almost each individual who has done any work along this line has his own pet method of treatment and these vary from alkaline to acid. That appears very inconsistent and to me indicates that a great deal more work is necessary before we are able to say that we have a satisfactory cure for trichomonas vaginalis vaginitis. I have followed Greenhill's recommendation which is as follows: "The vagina is thoroughly scrubbed with tincture of green soap. All the vaginal folds are smoothed out and every part of the mucosa is scrubbed. The scrubbing is one of the most important steps in the treatment, and is usually persisted in until slight bleeding is noted in the vaginal mucosa. Bleeding generally occurs because the mucosa is friable in these cases. The soap is washed out with tap water or with mercuric chloride, and the vagina is dried thoroughly.

A speculum is inserted into the vagina and hexylresorcinol is instilled into the vagina and applied all over the vaginal wall, in the vault of the vagina and on the cervix. A tampon saturated with half or full strength glycerine is then inserted high up into the vaginal vault. A second, dry tampon is inserted to prevent the escape of glycerine on the patient's clothing. Hexylresorcinol is applied to the vulvar and anal regions and the patient is instructed to remove the tampons after twenty-four hours. The string of the second tampon has a knot tied in it, so that the patient may know that this tampon is to be pulled out first. After removal of the tampons a douche of tincture of green soap is taken. The treatment outlined is repeated every second day for at least three times. The patient takes a green soap douche on the mornings between treatments but not on the mornings that she is to receive a treatment. Treatment is continued until hanging drops on two successive visits fail to show the trichomonas. However. the patient is advised to take a 0.5 per cent lactic acid douche daily for about two weeks after treatment is discontinued. The purpose of the lactic acid douche is to attempt the reestablishment of the normal bacterial flora in the vagina. A matter of great importance, but unpleasant to discuss, is the cleansing of the anus after bowel movement. To accomplish the latter most women use an upward sweep toward the vagina and urethra, but this may produce reinfection if the causative organisms come from the rectum. The patients are instructed to use a sweeping motion directed from the vagina and toward the sacrum. The significance of this method of cleansing the anal region should be impressed on the patient."

Dr. H. H. Cummings of Ann Harbor, Michigan. in December 1932, reported the use of an ointment prepared with neosalvarsan, glycerine and tragacanth with fairly successful results and he has done away with the scrubbings of the vagina. He does use green soap to cleanse the vagina but makes no attempt to scrub nor to produce bleeding. I shall want to try this method because it seems to me that it will cause the patient less discomfort.

The use of 1% picric acid in a medium which will slowly dissolve was recommended by J. R. Goodall and he is very enthusiastic about the results obtained. He considers picric acid a specific in the treatment of trichomonas infection and the treatment that he recommends has this advantage over other: The patient can insert the vaginal cones each night and take the douche each morning and in that way is much more apt to receive regular treatment. In these times when finances are low with almost every one it is a very difficult matter to get a patient to report regularly for office treatment and the regularity and persistence are most important factors in the eradication of the trichomonas.

Some men are very enthusiastic in their reports of good results obtained by any of the many methods of treatment but for the most part the men who have treated the most cases are very conservative in their statements and say that it is a difficult matter to cure the condition and that even if a cure is affected there is apt to be a recurrence or frequent recurrences. They emphasize the fact that these patients should be kept under observation and examinations made immediately following the menstrual periods for some time after the symptoms have been relieved and after the protozoa are no longer found in the vagina during the intermenstrual period. The organism thrives best on a medium containing blood.

THE USE OF VACCINE IN THE TREATMENT OF CHRONIC ARTHRITIS*

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The treatment of chronic arthritis has been unsatisfactory. The problem of improving this treatment has been most difficult. Osler said "when a patient with chronic arthritis comes into my office I have a strong inclination to jump out of the window." It is claimed, and on good authority, that chronic arthritis causes the human race more suffering, and is responsible for more disabilities than any other disease(1).

Our armament for combating this disease consists of the following: Removal of foci of infection, non-specific proteins (as typhoid vaccine, milk, etc.), medication (as salcylates, iodides, arsenic, cincophen, amydoxol, etc.). thyroid extract, colonic irrigations, diets low in caloric value and low in carbohydrates, physical therapy, equitable climate, and orthopedic treatment. All of these remedies are of value in the treatment of chronic arthritis, but in a large per cent of cases any or all of them will not produce satisfactory results. In recent years the use of vaccine has come to the foreground as a method of treatment. It is to this treatment and my experience with it that I wish to call your attention.

All cases of arthritis may be classified into five groups. These are rheumatoid arthritis, osteoarthritis, rheumatic fever, gout and arthritis due to specific agents, (as tuberculosis, gonorrhoea, typhoid, pneumococcus, syphilis and amoeba). This, like all other classifications, is subject to many criticisms. It is. however, simple, practical, and based as far as possible on etiology.

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Rheumatoid arthritis was originally an English term but is rapidly becoming accepted in this country. It has the same meaning as atrophic, proliferative, and chronic infectious arthritis. This is a chronic type, occurs as a rule before the age of forty-five; the onset in particular is often febrile; the joint changes are almost always bilateral; the middle phalangeal is often the first joint to become involved. There is fusiform swelling of the joints, later there are deformities, contractures and ankylosis.

Osteoarthritis is also an English term which is rapidly becoming accepted in this country. It is synonymous with hypertrophic and degenerative arthritis. This is a chronic type, occurs most often after forty-five years of age. The onset and course is afebrile, the joint changes are often unilateral, muscular atrophy occurs only late and from disuse. The larger joints, distal joints of the fingers, and spine are most commonly affected. The irregular hard swellings of the distal phalangeal joint, or Heberdens' nodes are very characteristic. Ankylosis is rare.

Rheumatic fever is characterized by acute febrile attacks of a migratory arthritis which tends to recur, and is often associated with cardiac injury. Rheumatic fever may result in a chronic arthritis, and is then most often of a rheumatoid type. It is interesting to note that in 1860 Sydenham described three stages of arthritis, the first we now recognize as rheumatic fever, the second as rheumatoid arthritis and the third as osteoarthritis.

Gout is a metabolic disease associated with faulty uric acid metabolism. Tophi are frequently found in the skin. The uric acid in the blood is increased, while in the urine it is decreased.

Arthritis due to specific agents have no important common characteristics. The diagnosis of this group of arthritidies depends on a recognization of the primary disease and a consciousness that it may be associated with joint manifestations.

A correct diagnosis is the first and one of the most important steps in treatment. The vaccine of which I will speak is of no value in the treatment of arthritis other than in rheumatoid arthritis, osteoarthritis and chronic cases of rheumatic fever.

Warren Crowe of England has been an enthusiastic worker and writer in regard to the use of vaccine in chronic arthritis. He has isolated many types of non-hemolytic streptococci from his patients with chronic arthritis. These have been found in particular in the gastro-intestinal tract. He feels that these streptococci are the cause of osteoarthritis. He has isolated a staphlococcus albus which he feels is the cause of rheumatoid arthritis. A stock vaccine prepared from cultures of these organisms has, according to his reports, been most valuable in treating chronic arthritis. He recommends subcutaneous use of the vaccine, and emphasized the use of small doses(2).

Homer Swift has worked in particular with rheumatic fever. From the joints and subcutaneous nodules he has isolated a hemolytic streptococcus which he has reasons to believe is the specific cause of rheumatic fever. He has prepared a vaccine using this organism. Good results have followed the intravenous use of this vaccine in subacute and chronic cases of rheumatic fever(3).

Cecil, working with rheumatoid arthritis, obtained positive cultures from the blood and joints in a large per cent of cases. These organisms were readily agglutinated by the patient's blood, and re-produced arthritis in rabbits. He feels that these organisms are the specific cause of rheumatoid arthritis. Vaccine has been prepared and used with favorable results(4).

Grey and Graven have repeated Cecil's work with similar results. They report favorably the intravenous use of their vaccine(5).

Other workers report their inability to obtain the high percentage of positive cultures obtained by Cecil(6)(7).

Hadjopoulos and Burbank, working with cases of rheumatoid arthritis, obtained positive cultures from the joints, and adjacent tissues in a large per cent of cases. By special staining they were able to demonstrate organisms in these tissues. They find in particular a streptococcus virdens of low virulance which they feel is largely the cause of rheumatoid arthritis(8).

Wetherby and Clawson report blood cultures to be positive in a fairly large per cent of cases of chronic arthritis. They conclude largely from agglutination tests that chronic arthritis is group rather than type specific. They have prepared and used a vaccine from cultures taken from a case of rheumatic fever. The vaccine is used intravenously. Annual experiments indicate that desensitization is accomplished more easily by intravenous than subcutaneous injections. They have obtained satisfactory results in a large per cent of their cases(9).

The literature contains much other interesting information on this subject.

I feel that it is definitely proven that rheumatoid arthritis is a bacterial disease, and it is fair to assume that osteoarthritis is also a bacterial disease in which trauma, in a broad sense, plays a part. Menopause, obesity, thyroid deficiency and other conditions may be associated and aggravating. Climate through infection plays a part. The changes which occur in and about the joint may be due to the presence of the bacteria and their toxins, or they may be allergic manifestations. Removal of foci of infection is important but should be done very early. By the time a case of chronic arthritis has become well developed the organisms have spread throughout the body and it has become a systemic disease. Removing an infected tooth or tonsil at this stage is like cauterizing a chancre to cure syphilis. No known medication will destroy these organisms without destroying their host. Our greatest hope lies in building up the patient's resistance, that is, immunizing or desensitizing, or both, as the case may be. There is a question as to whether the condition is type or group specific. This is an important question. If it is group specified a stock vaccine should be satisfactory; if type specific, an autogenous vaccine from carefully collected cultures must be prepared. I have observed not infrequently that a stock vaccine will be relatively impotent, while an autogenous vaccine will be extremely potent.

The work which I am reporting has been done in conjunction with my associates, Dr. George Covey and Dr. George Underwood.

In treating cases of chronic arthritis we have proceeded as follows: history, complete examination and routine laboratory work is done. In doubtful cases, in particular when the spine is in question, x-ray examinations are made; basal metabolic rate determinations, and examination of the stool for amoeba are frequently done. All complicating and associated conditions are given consideration. This done we proceed to culture all suggestive foci of infection. Cultures may be made from the blood, throat and tonsils, nasopharynx, sinuses, abscessed or devitalized teeth, duodenal contents, stool, bowel well, urine, prostatic secretions, cervix uteri and other sources.

These cultures are taken in nutrient brain broth and allowed to incubate for eight to sixteen hours. They are then plated on fresh blood agar plates and cystine heart hemoglobin agar plates. The various colonies are classified. New varieties are further studied by animal inoculation, agglutination and the pathogen selective test. Each organism which we feel is arthritis-producing is used to make a vaccine. The patient is then skin tested with his own as well as with similar vaccines from other patients, for sensitiveness. All organisms to which he is sensitive are used to make up his vaccine, and there is added a vaccine containing a group of organisms which have proved most potent in previous cases. This latter vaccine now contains twenty-five organisms including streptococcus viridans, hemolytic streptococcus and staphlococcus albus.

The vaccine is given subcutaneously at five to seven day intervals. The dose is kept extremely small as compared to the dose of commercial vaccine. The first dose is as a rule ten thousand organisms. The more extensive and active the arthritis the smaller the dose should be. This is very important as marked and lasting acerbation of symptoms may be caused by too large a dose. The size of subsequent doses depends on the reaction of the preceding dose. The patient may react in one of three ways; there may be no change in any respect, in which case the next dose should be increased. There may be increased symptoms. soreness, pain, joint swelling and general ill feeling, in which case the next dose should be markedly decreased. There may be a feeling of well being with relief of pain, stiffness and joint swelling. In this case the dose should be repeated. In some patients a favorable reaction cannot be obtained. In these cases the dose should be kept just less than that which produces an unfavorable reaction. We have learned to expect slower improvement in these cases. I have been much impressed by the potency of our vaccine, and by the harm which may be done by too large a dose. It is difficult to say how long treatment should be continued. A number of cases who were entirely relieved after ten or twelve doses have returned with symptoms after a few months and been relieved a second time. One case, receiving only five injections, has had no recurrence during a year and a half. Other cases have been treated for as long as a year with progressive although not marked improvement.

The following tabulations show our results in fifty cases. Over twice this number have been or are being treated, but most are not included as sufficient time has not elapsed to reasonably conclude what the final results will be. The percentage of improvement was arrived at by careful consideration of the objective finding and by asking for the patient's own estimation, considering their pain and disability before treatment as one hundred per cent.

Rheumatoid arthritis Number of cases 15

Severity	Number of Cases	Average Per Cent of Improvement
Mild	4	60
Moderate	4	44
Severe	7	33

Osteoarthritis Number of cases 22

Severity	Number of Cases	Average Per Cent of Improvement
Mild	9	50
Moderate	11	48
Severe	2	75

Mixed type: Number of cases 6. Average per cent of improvement 45.

Chronic rheumatoid fever: Number of cases 3. Average per cent of improvement 70.

Sciatica and Myositis: Number of cases 4. Average per cent of improvement 0.

Average per cent of improvement, all cases, 50%.

40% of cases improved, over 75% (good results).

30% of cases improved, 25-75% (satisfactory results).

30% of cases improved, less than 25% (poor results).

CONCLUSIONS:

1. The results of treatment of chronic arthritis in the past has been unsatisfactory.

2. Reliable investigators find good reason to believe that chronic arthritis is a bacterial disease and amenable to vaccine treatment.

3. Autogenous vaccine has been used in approximately one hundred and twenty-five cases, with good results in 40%, satisfactory results in 30%, and poor results in 30%. This I feel is a distinct improvement over previous results.

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DISCUSSION

F. LOWELL DUNN, M. D., (Omaha): I am sorry that I was late and did not hear Dr. Rogers' paper, but he very kindly let me see a copy and if he followed his text, I know in a general way what he said.

I was particularly impressed with the care that Dr. Rogers had taken in order to select as nearly as possible etiological organisms. He has studied both the organisms obtained from the patient as well as the type of organisms prevailing in his community. I think that many of us have been forced to admit there is a definite screw loose in vaccine theory or in our applications of it. In applying vaccine theory to the streptococcus group in all probability the problem of selecting a suitable organism is the most difficult. To demonstrate that a given organism is an etiological factor requires animal inoculations, agglutination test, and other tedious and not wholly reliable methods. Skin tests have value but can lead one astray since the tissues of the skin are not the same as those of the arthritic joint.

We have begun work with the cataphoresis method as used by Falk and Rosenow. This method determines the size of the negative charge carried by the organism by observing the rate of migration in an electric field. The studies to date indicate that this rate of migration is related to the virulence and elective localizing powers of the organism. If this work is substantiated it may provide a more accurate method for picking out etiological organisms. Although the apparatus requires considerable skill to operate it is very rapid and should be much cheaper than animal inoculations.

The selection of the organism responsible for the disease is not sufficient for vaccine purposes since many such organisms are not stable and cannot be grown on culture media without changing their properties. This difficulty is particularly true of the streptococcus group, a fact not generally appreciated. It was impressed on us in a large series of animal inoculations which we performed when studying focal infections. Our results were frequently disappointing but once in a while we would get a strain which would hold its specificity for a particular tissue through a number of culture transfers and through a number of animals. A heart strain was isolated by N. W. Jones which produced endocarditis almost uniformly in dogs. The arthritis strain isolated by Clawson and available as a vaccine is apparently a highly stable organism.

In addition to the above some organisms are poor antibody producers while another closely related strain is good. In selecting an organism for vaccine production this should be considered. This can be controlled by animal inoculations or by determining the agglutinin or precipitin titer of the patient's serum after a series of injections.

I feel that Dr. Rogers is concentrating his attentions on the right spot when he spends so much time in the selection of the organisms for a vaccine, and that studies in which the cultural stability, the antibody production, and the elective localization of the organism is considered will give the highest yield of successful results. Such studies will show whether or not there is some basic error in our theory of vaccine therapy.

A. S. RUBNITZ, (Omaha): I favor vaccine therapy, not because it gives 100 per cent results, but because occasionally we get improvement from this source. Certainly we do not get anything from other methods of therapy. After all with the exception of the metabolic types, all arthritides should be considered as infectious in origin. The secret of success depends upon getting the organism we are looking for in the preparation of our vaccine. I believe in many cases we are lucky enough to get the responsible organism. If we are, we may hope for good results.

Here again the thing to remember is the time when we may expect results is comparatively early in the course of the disease. Within the first year you may hope for fairly good results. The further you go, the more changes you have in the joints, and naturally you cannot expect very much, as far as perfect results. An ankylosed joint will always remain so. The same is true about any deposits within or around the joint, so the success of the treatment depends upon how early we institute it.

From this standpoint, I would stress whatever focus you suspect—teeth or tonsils or sinuses—as a causative agent, be sure to try to obtain a good culture when that focus is eradicated surgically; obtain a culture at operation and prepare a vaccine from it to use later on. At present there is a good deal of hope that there may be a group specificity instead of a type specificity in the arthritic infections; with that in view stock vaccines are used by many. Still, I adhere to the theory that there is a type specificity in each case, and therefore we should use autogenous vaccines as much as possible.

I want to call your attention to the intestinal tract as a source of infection. I have heard of a good many cases, where I prepared the vaccines, that the attending physician thought he got the best results from vaccines obtained from the gastrointestinal tract.

I want to mention one point I think Dr. Rogers did not follow, and it is an important point. You may lose the organism in the process of plating. In my experience, most of the streptococci from the digestive tract are semi-anaerobic. They generally die out on plates, but will grow on the bottom of long broth tubes. I have lost them on many plates. If you will stick to liquid media and make up your vaccine directly from the liquid media, your chances for not losing the organism are much better.

DR. ROGERS, (closing): I have nothing to say in closing except to thank the doctors for their discussion.

ON THE ORR METHOD OF THE OSTEOMYELITIS TREATMENT

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Leningrad, U. S. S. R., June, 1933.

(Note by the Editor: This article by a foreign author is published in his somewhat peculiar English phraseology, which is unique. It shows a Russian appreciation of the Orr method and is well worth reading.)

The comparison between the results of the Orr method and the results of other methods of treatment, in which I have an experience of twenty years and on which I have printed works, gives me the right to expose following considerations.

Orr is basing his method of the osteomyelitis treatment on the complex of Lister's ideas that have triumphed in surgery. One has to agree with Orr, that Listerism has been and is still incorrectly understood by many surgeons. With Pasteur's discovery on the nature of fermentation the idea of wound infection with microbes was in the air. Lister was the first who has drawn conclusions (ingenious for his time) on the processes complicating the progress of the wounds and has offered for their treatment his antiseptic dressing.

Lister's first convictions, that a wound infection can be only resisted exteriorly, are to a great regret, profoundly inculcated in the minds of surgeons even up to the present time. But this error was pardonable to Lister as he knew nothing about the existence of hematogen infections and about the resistance of an organism to infection through its own forces. But in a short time, he himself corrected this error. At the congress in Copenhague he declared publicly to be ashamed of the phenol spray. In his famous work: "On the new method of compound fracture treatment," in 1867, Lister was already establishing the principle of wound protection instead of wound treatment, preventing infection by means of antiseptics. But this protecting antiseptic of Lister has been at the beginning purely chemical (principally carbolic acid). Only later, the value of "rest" for the wound being emphasized as well as that of a "good drainage for the wound water" (Thomhayn), the center of gravity of Lister's method has removed in the direction of Chassaignac's drainage, Hilton's rest and Thomas' splinting. The Protecting Preventive antiseptics, evaluated gradually, became under Lister himself, Physical antiseptics. In such a manner Lister's doctrine has in no way been at a dead set. on the contrary, it was dynamic, progressing. Having accomplished a revolution and established a new era in surgery it has later changed by means of evolution into physical antiseptics, which is the foundation of the rational modern method of wound treatment.

That the ideas of physical antiseptics were then soaring in the air is to be seen in the doctrines of another surgeon of genius belonging to that epoch—N. I. Pirogov. As early as in the year 1865 he considered as evident the merits of a good drainage and of a well absorbing dressing material for the protection and cleansing of wounds; on the other hand, Pirogov says that "immobilization is an important factor for wound treatment." In another place Pirogov is saying: "A plaster bandage may be ranked not only among the palliative means but also among those preventing inflammation."

Since that time a fifty years experience in wound treatment in all countries has persuaded the surgeons of the steadiness of the drainage principles, of the wound repose and of the immobilization of extremities, and they became the fundamental elements of physical antiseptics in treating infected wounds. And if, notwithstanding some surgeons deny the laws forged by historical necessity and invent any new modern methods of treatment, one can duly be sorry that not these surgeons themselves but the patients on whom they verify their modern method suffer from them. If history itself has been unable to teach them, these surgeons will never be persuaded.

Orr has splendidly understood, that after Lister the history of wound treatment is working in the same direction, concurring to the development of Lister's ideas of physical antiseptics; drainage, rest, protection of wounds from irritation, immobilization. And this thesis Orr is taking as a solid foundation for his method.

Further requests of Orr, an Extensive Trephyning of the osteomyelitic area, a pedantic cleansing from sequestra and necrotic bone tissues with the formation of an extensive outlet of the bony trough, the avoiding of a broad osteomyelitic "bottle" with a narrow outletting "gullet" in presence of a fistula have been since long ago the requirements of the rational practical surgery. Personally I wrote on this subject as early as 1916. It is only under these conditions that the suppurative wound secretion does not remain in the depth of the wound. A detaining of pus threatens with the intoxication of granulation cells, injury, necrosis, a further penetration of the infection in the sequestral chamber and a progress of the bond tissue necrosis. This task of liberation from necrotic tissues and sequestra and a durable healing of an osteomyelitic area can be fulfilled neither by the pyophiges nor by the bacteriophagues. It is necessary, therefore. to consider a careful fulfillment of Orr's operative requirements as an exceedingly important item of his method.

Having in view to "safeguard the wound from irritation and secondary infection," Orr wishes the drainage gauze plugs, left in the wound after the operation, to be mechanically expulsed out of the wound, the latter being filled up from the bottom to the surfase by showy, rapidly developing, granulations.

To accomplish this task Orr uses: Mineral oil; 1. Oleum vaseline medic .5 and Paraffini Liquiri; 2. A bandage of long duration, and 3. Immobilization.

Many authors have tried the use of Oleum Vaselini during the last World War. For instance, the Russian physician, Dr. Sliva, has used paraffini liquidi since 1918, at first for skin transplantations by the method of Thiersch; since 1920 in treating osteomyelitis and since 1925 he has used quite systematically vaseline bandages after the excision of the borders during the primary dressing of a wound. Basing on his 10 years experience in the use of Oleum Vaselini, Dr. Sliva comes to the conclusion that:

1. "Suppurating wounds giving an aboudant discharge were rapidly reducing the amount of it," in reason of which—
2. "It is possible to dress the wounds much more seldom."
3. "Dirty wounds kept under paraffin never produce a foul odour as generally,"
4. "The dressing is very easily withdrawn without disturbing the granulations,"
5. "The patients cease to fear the changing of bandages,"
6. "Pyocyaneus is almost never appearing,"
7. "Epithelization progresses more rapidly,"
8. "The scars are incomparably softer,"
9. "During the treatment of osteomyelitis, with all other conditions being equal, the healing process is more rapid, the percentage of relapses and repeated trephinings is a great deal smaller."

It is to regret, that Dr. Sliva has not collected his data and published the results and that the information he has given me and his conclusions are based exclusively on impressions obtained "from observations of a long duration, made in hospitals on the use of a method which, became my favorite one in wound treatments," as Dr. Sliva writes.

The same is to be said concerning the keeping of a dressing for a long time on an infected wound. N. I. Pirogov has applied on a large scale (a long time before Neuber) Larrey's idea on dressing the wound with great intervals." Even in summer I did not change the dressings over 8 days although worms were already crawling on them. The latter do not impede the development of magnificent granulations;" writes Pirogov.

Salieri, about 1922, recommended for bone tuberculous fistulae a continuous plaster of Paris dressing not to be taken off until the fistula closes or clinical symptoms for its withdrawal appear. Not only Orr has risked to introduce into his method as a system the bandage of long duration and not only in the presence of suppurating fistulae but also in the presence of extremely abundant secretions of a widely gaping postoperative osteomyelitic trough. Up to the present time he has still opponents who can in no way agree with the method on account of the stench of the bandage. And Orr's plaster of Paris cast, unremoved for a long time, is of great importance in osteomyelitis, not only as a means of immobilization of an extremity with the pure pose to give rest to the wound, but also as a means for the fixation of the dressing material on the wound itself to prevent it from slipping off the wound; it prevents also a subsequent secondary infection of the granulations and their lymphatic clefts causing new bone sequestra.

Prof. Turner believes that the plaster of Paris helps to absorb the secretion thus diminishing its decomposition.

Somehow or other, but as an item of all the above enumerated ideas the Orr method is a beautifully elaborated development of the sane principles of surgery. From this point of view it will concur to the progress of surgery.

I have applied the technic of the Orr method as it is when treating the osteomyelitis with several slight particularities of my own.

Firstly, I separate the periosteum and the soft tissues during the operation and draw them aside as much as it is required for the trephining of the bone; on those parts of the bone, that are not supposed to be trephined neither the periosteum nor the soft tissues, the scar all the less, are to be separated to avoid further necrosis of the bone borders in cause of lack of nutrition. In cases of osteomyelitis accompanied by fistulae I always advance with the chisel along the fistula which shows me the way to the sequestral chamber; a notion of the direction and depth of the fistula, being given to me after an examination with the probe. This prevents a superfluous removal of the sane parts of the bone that are not in the way of the osteomyelitic hearth outlet.

I do the plugging of the wound by filling it up to the brims with paraffin liquid in a position which permits it. After that I loosely plug the corners and the length of the wound with separate gauze compresses soaked in vaseline 10 by 10 cms, or 15 by 15 cms., depending on the depth of the wound. Taking the compress by its center with long anatomical pincers, I push it to the bottom of the cavity. A series of such compresses loosely packed to the bottom of the cavity, soaked in vaseline, form a cone of fillings gradually widening to the outside. To prevent an early joining of the wound borders I place at the outlet of the operative wound, between the "bouquet" of protruding gauze plugs and the skin, to the whole depth of the soft tissues, along the wound, several layers of the same soaked in vaseline gauze compresses slit in two. These gauze layers, along which glides the protruding "bouquet" expulsed of the cavity by developing granulations, serves not only to absorb the suppurative secretions but also as a kind of strut for the soft tissue borders.

Only in cases of strong suppuration the plugs appear to be expulsed as early as the first dressing or are easily detached with the withdrawal of the bandage. At the first post-operation, the vaseline soaked "bouquets" appear in most cases grown fast among the showy developed granulations. Therefore the advantage of a shorter interval (some 2-3 weeks) between the operation and the first dressing than that between the following dressings seemed evident to me. About the time a sufficiently solid granulation layer is developed, preventing an infection from the outside, less bleeding is to be seen at the extraction of the gauze plugs not yet covered with granulation tissues. I do not change gauze compresses put along the soft borders of the wound at the first post-operative dressing. Strips of gauze slightly introduced into the depth of the wound stop the bleeding, caused by the extraction of the plugs and the well dried cavity is again filled with vaseline and with gauze strips soaked in same and the plaster of Paris cast is readjusted. Therefore I have never changed the splinting. I make the second and following dressings, which show gauze plugs expulsed by the strong growing granulations or detached easily without any bleeding, every 3-4 weeks.

To minimize the odour of such bandages of long duration I put on the wound the best pus absorbing material — Sphagnum cymbifolium (turph moss),—which owing to its high hygroscopical and capillary qualities is known as deodorising. With its use there are no complaints about bad odour.

About 25 different kinds of osteomyelitis of all long bones treated by me; chronic, after gunshot and compound fractures of adults and children, had a very smooth post-operative period. Only in the first case I could observe a transitory rise of temperature up to 38° C, and in several other cases a slight rise of temperature, of some tenths of a degree. Usually the post-operative condition showed no rise of temperature, notwithstanding the sometimes enormously big surface of the osteomyelitis hearth, subjected to debridement. Even in the cases of relapses where fever was preceding the operation the temperature invariably fell after it. Parallel to it pains were always disappearing with astounding rapidity. There were no septic or other complications, no mortality.

Contracture deformations, existing before operation, were rapidly and considerably straightened as soon as the wound healed, the plaster of Paris cast was taken away and a practical possibility to begin movement and mototherapy appeared.

The total amount of dressings during the whole treatment period up to the closing of the wound fluctuated between 2 and 6, i.e. about 10-15 times less than with the commonly adopted methods of osteomyelitis treatment.

In the Orr method the nature of the dressings is such that the patient does not suffer any pains neither when it is taking place nor after it. Even children don't react to dressings, no cries are to be heard, no tears to be seen; dressings are almost psychics. Almost all the dressings were made in the out-patient department, patients with osteomyelitis of the leg left the hospital 2-3 weeks after operation.

Osteomyelitis of the upper extremities left the hospital on the eighth or tenth day. In such a manner, with the Orr method there was a great saving in the care of physicians and of the nursing personal and in dressing materials and a great increase of the bed capacity of a hospital.

The influence of the Orr method on the patient's general condition is astounding. Meeting the patients rather seldom in the post-operative period one sees distinctly how they improve and increase in weight.

The duration of healing has been: In the osteomyelitis of the upper limbs about 2-3 months. On the bones of the lower extremities up to 5 months in the average.

The durability of healing attracts attention: Only in one of my cases a secondary operation was required. I have operated chronic osteomyelitis almost on all bones of the upper extremity, on the foot, leg and the thin femur bone under a local ½ p. c. novocain anesthesia. Only the thick femur bones and children were operated under general narcosis.

Osteomyelitic patients have always been the step-children of surgery and have occupied the worst places in the surgical wards. The surgeons had no interest in them. The great number of proposed and used methods of operating them evidence that the results of none of them satisfied the surgeons. Cases with fistulae continuing tens of years with attempts to close the osteomyelitic wound are well known to every surgeon. And the closing of an osteomyelitic hearth has never been to be relied on. The arising relapses exasperated the physicians and still more the patients. No wonder then that the patients have voluntarily consented to new operation attempts, although they were well conscious of a new physical trauma caused by the long, repeated post-operative wound dressings.

Orr, who has founded his argumentations on a profound analysis of Lister's doctrine and has combined it with the regime of immobilization, has created a very simple method for osteomyelitis treatment, which I consider, is worth to be adopted as a standard one. I have already expressed this thought on the pages of one of the medical journals. (Orthopedics and Traumatology, 1932, USSR.)

IMMEDIATE CECOSTOMY AND CONSTANT LAVAGE IN MERCURIC CHLORIDE POISONING

In an analysis of 163 cases of mercury poisoning at the Mount Sinai Hospital of Cleveland, S. S. Berger, H. S. Applebaum and A. M. Young, Cleveland (*Journal A. M. A.*, Feb. 27, 1932), noted a number in which the patients survived the usual gastric and renal damage but succumbed to a gangrenous colitis. This lesion was apparently successfully prevented in three cases by constant colonic lavage following cecostomy done within a few hours after the ingestion of the poison. The authors believe that immediate cecostomy and constant colonic lavage is the most effective measure for the prevention and treatment of the gangrenous colitis. By immediate cecostomy is meant its performance as soon as the patient is admitted, provided he is not in extreme shock. The diagnosis of mercury poisoning is first established by the detection of mercury in the gastric lavage by the electrolytic method of Booth and Schreiber, which can be done in a few minutes.

TUMOR OF HIP JOINT

MAX EMMERT, M. D.,
Omaha, Nebraska

N. C., a farmer, aged 28, was referred to me 1-31-21, complaining of hip trouble.

P. H. He had always enjoyed good health. Tonsils and adenoids were removed several years ago. Was in army service for one year. Four years ago had fluid on one knee joint for 2-3 weeks, no similar trouble since.

P. I. Three years ago while penning up his hogs one ran between his legs, forcing lateralward the left leg. This caused a severe pain in the left hip. Since that time there has been restricted motion in the hip joint. Also it becomes stiff if he remains in a sitting position for any length of time. Pain radiates through the hip but never down the thigh. It is not influenced by change of weather. There is a decided limp on the left side when he walks.

Examination: Healthy looking man who walks with a decided limp on left side. Throat—inflamed. Several dead teeth. Thorax and abdomen negative. Genitals and urine normal. Rectal—no glandular enlargement, prostate normal. Wassermann negative. Legs—measurements both legs equal. Trochanter left side larger than right. Motion—marked restriction left hip. Pelvis moves with femur. Practically no abduction. Flexion about 15%. Femoral and inguinal glands slightly larger than on right side.

X-ray: There is a bony growth with a border of bony tissue and interior cellular rarefied area, apparently resembling a honey-comb. This is located anterior to and beyond the neck of the femur and somewhat posterior. It is about the size of a ball and extends from the great trochanter toward the median line. It has no feathery outline and is not a periosteal sarcoma. It has many strong resemblances to real bone sarcoma, rather than an exostosis.

Operation: 2-9-21, operation through anterior incision. No evidence of tumor seen. Tissue removed for section. Forced motion of hip while patient was under anaesthesia.

Pathological report of tissue: "Examination of tissue shows it to consist of fibrous tissue, throughout which there are interspersed small round cells of the lymphocyte type. There are many thickened blood vessels, lumina of which show free red blood cells. No evidence of malignancy can be made out. Hyaline degeneration of the muscle.

Diagnosis: "Chronic inflammatory tissue."

X-ray: 2-18-21. There is a slight dense area which shows a marked collapse in the contour of this cellular outline. Evidently there is a change in the cellular contour following operation, and also a change in the cellular structure itself.

April 5, 1921: Patient returns feeling fine. Has been doing some farming. About 50% more hip motion than formerly.

X-ray: There is a cellular growth about the lesser trochanter extending to the ramus of the pubes and underlying the same, and somewhat suggestive of a possibility of its being attached to it or at any rate closely associated with the ramus.

August, 1921: A hard mass could be palpated beneath the gluteal muscles.

Clinical Diagnosis: Osteoma.

X-ray: 2-15-22—"He has a large semi-bony mass closely associated with the neck of the femur, exhibited slightly above it between the trochanter and the head, back of the neck and well back of the ramus of the ischium. The growth has been studied through its various changes and shows marked increase in calcium deposit and closely associated with the neck of the femur without loss of bone or fading of bone, apparently not a sarcoma nor cystic, but retaining a continuous calcification apparently attached to the neck of the femur at its lower border, between the lesser trochanter and well toward the head of the femur."

Operation: 2-15-22. Posterior incision. Glutei muscle separated and later sectioned for 2 inches near trochanter. Osseous mass attached to neck of femur released easily with saw and removed, after which a number of faceted segments were removed easily with fingers alone. Growth extended below and median-ward and slightly anterior to lesser trochanter. Some segments more of a bony structure than others. Scattered points of osseous activity were scattered over the surface of the softer segments which evidently were younger in development. Section of segments revealed a honey-combed appearance with a thin cortex of bone. Others were more definitely developed bone in structure. Combined weight of all the segments removed was 2 ounces. Forced motion was again used under anaesthesia. The patient made a good recovery, was followed for a number of years. He regained full use of the hip joint, and, as far as I know, has never had a recurrence.

COMMENT

A history of this case with several bony segments was sent to Dr. J. C. Bloodgood, who made a diagnosis of Exostosis. There are several interesting points in this case, viz: (1) the indirect injury; (2) the slow development; (3) the benign character of the tumor; (4) the segmented type of growth. Apparently at the time of injury a muscular or ligamentous attachment to the trochanter was torn. This injured area was kept under more or less constant irritation by motion of the thigh. The segmented type of growth is problematical with the possibility of a hematoma into which the detached osteogenetic cells started separate nuclei for growth.

PHYSICAL CHARACTERISTICS OF HIGH FREQUENCY CURRENT

Allan Hemingway and W. K. Stenstrom, Minneapolis (*Journal A. M. A.*, April 23, 1932), emphasize the fact that the small amount of physical knowledge acquired as a premedical student is likely to be temporarily forgotten under the overwhelming load of anatomy, chemistry, physiology and so on. It is for this reason that they commence their paper with a brief review of some of the fundamental principles of electricity that are applicable to the action of high frequency. They then give a detailed discussion of the applications of physical and chemical theory in diathermy and the methods and clinical use of short wave therapy (radiotherapy).

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THE 1933 CONFERENCE OF SECRETARIES AND EDITORS

The 1933 Conference of Secretaries of State Medical Associations and Editors of State Medical Journals under the auspices of the American Medical Association was held at the Palmer House, Chicago, September 22 and 23. As on former occasions, the conference was well attended and the interest in the program offered was keen. Through the courtesy of the Chicago Medical Society the members attending the conference and the officials of the A. M. A. were tendered a complimentary dinner in the Trustees Lounge, Hall of Science, Century of Progress Exposition on the evening of September 22.

Dr. W. L. Bierring, Des Moines, President-Elect of the American Medical Association. spoke on the over-supply of physicians. In the United States there is 1 physician to about every 780 persons. The right proportion would be 1 physician to about 1200 persons. We have an excess of 35,000 physicians. Alberta is regulating the matter by a law which provides that licenses shall be granted in the last above named proportion, only.

Dr. Bierring argued for a higher standard of entrance requirements—a bachelor's degree—and feels that a change of curriculum is coming.

The problem is not easily solved. It is well known that the country suffers from over-production in many lines. There is an over-production of human talent and training just as there is of farm products. There are too many attorneys, too many dentists, too many engineers and architects, too many teachers. There also are too many skilled and unskilled workers in industry, too many coal miners, too many salesmen. On every side one sees a surplus, which operates exactly as does a surplus of wheat, or corn, or anything else in confusing the market and forcing down prices.

Civilization's responsibility henceforth is the task, not of reducing the number of men and women in given professions or trades, but of providing them with something to do at which they may make a living.

The work of the educational committee of the Illinois Medical Society was presented and elaborated by its secretary, Dr. H. M. Camp. The work of this society is outstanding among state associations and by comparison puts the Nebraska association to shame.

The Illinois society fosters physically handicapped children's clinics and invites cooperative organizations to participate—State Department of Public Welfare, State Department of Public Health, State Department of Public Instruction, and any other state departments or agencies which may desire to cooperate, Parent-Teachers Association, Dinner Clubs, Federation of Woman's Clubs, Local Nursing Units. and any other agencies or organizations desiring to aid in a cooperative way.

The society has package libraries on about 130 topics available to the general reader. It fosters and suggests topics for talks to lay groups and radio talks. Proposed radio talks are censored by the education committee.

Medical Defense came in for a discussion headed by Dr. J. E. Tuckerman of Cleveland, chairman of the Ohio Medical Defense committee. The methods employed in the several states vary little. In Illinois the medical defense committee has functioned so well that few physicians will testify against a brother physician. In Arizona the committee fights cases to the finish and no cases have been won by the prosecution.

The rules of the Federal Emergency Relief Administration as they apply to compensation for physicians for services to indigent unemployed were alluded to and discussed. The following policy in part has been promulgated by the Relief Administration (as published in the *Journal A. M. A.*, for September 23, 1933):

"1. *Policy.*—A uniform policy with regard to the provision of medical, nursing, and dental care for indigent persons in their homes shall be made the basis of an agreement between the relief administration and the organized medical, nursing, and dental professions, state and/or local. The essence of such a policy should be:

"(*a*) An agreement by the relief administration to recognize within legal and economic limitations the traditional family and family-physician relationship in the authorization of medical care for indigent persons in their homes; the traditional physician-nurse relationship in the authorization of bedside nursing care; the traditional dentist-patient relationship in the authorization of emergency dental care; and

"(*b*) An agreement by the physician, nurse (or nursing organization) and dentist to furnish the same type of service to an indigent person as would be rendered to a private patient, but that such authorized service shall be a minimum consistent with good professional judgment and shall be charged for at an agreed rate which makes due allowance for the conservation of relief funds.

"The common aim should be the provision of good medical service at a low cost—to the mutual benefit of indigent patient, physician, nurse, dentist and taxpayer.

"The policy adopted shall be to augment and render more adequate facilities already existing in the community for the provision of medical care by the medical, nursing and dental professions to indigent persons. It shall imply continuance in the use of hospitals, clinics and medical, dental and nursing services already established in the community and paid for, in whole or in part, from local and/or state funds in accordance with local statutes or charter provisions. Federal emergency relief funds shall not be used in lieu of local and/or state funds to pay for these established services.

"The phrase "in their homes" shall be interpreted to include office service for ambulatory patients, with the understanding that such office service shall not supplant the serivces of clinics already provided in the community.

"(*g*) *Fee Schedule.*—The agreement between the state and/or local relief administration and the organized professional groups of physicians, nurses and dentists, state and/or local, established under regulation 1, shall include a fee schedule covering the basic and special services outlined in sections of this regulation. In the interests of simplified accounting it is suggested: That a flat rate be established, on a per visit basis for the usual care given to acute and chronic illness, for attendance at confinement, for emergency extractions, and for a bedside nursing visit; and that all special services (medical, nursing or dental) be covered by an agreed reduction from the usual minimum fee schedule for such services with an agreed maximum fee. A recognized differential in fee shall be established between a home and an office visit. All fees shall be established on the basis of an appreciable reduction from the prevailing minimum charges for similar services in the state and local communities, with due recognition of the certainty, simplicity and promptness of payment that authorization from the local relief administration insures. This schedule shall only apply where the expenditure of federal relief funds is involved and shall not preclude the payment of additional amounts from local funds.

"Where bedside nursing care is authorized, the flat rate per visit shall be established by agreement at not to exceed the certified cost per visit established for accredited visiting nursing organizations in the state or local district.

"Several other matters of importance to the medical profession were discussed but the above appeal to the writer as the most outstanding."

THE PHYSICIAN AND THE STATE FAIR

Because of the economic condition existing for the past several years, many of us have forgotten the tradition and ideals of our profession. Every man who graduates in medicine is necessarily an idealist. Certainly no young man entering medicine today takes up the study and pursues it with the idea paramount in his mind that it is a means of getting money and possible wealth. It is unfortunate that because of economic conditions, the struggle for existence, the excessive fees charged by some of our doctors, and the loss of some strength of character by ourselves and our public, we have lost, in the minds of the people, some of the prestige and respect which we formerly held. The ministry and other professions similar to ours are suffering in much the same way. It is impossible to believe that the present state of affairs will exist in our nation for any great length of time. Neither does it seem possible that the God of Money will be worshipped indefinitely. The best example of a different trend is the increasing interest taken in religion, art, and charity.

A great deal of complaint is heard about the straying away of our patients to the Christian

Scientist, the Chiropractor, and other cults. To some extent this is caused by peculiar conditions present at this particular time. Most of it, however, if we will stop to analyze, is our own fault and can be laid at the door of our apathetic attitude in complying with what the public wants, and our lack of interest in medical affairs of a general public nature. Certainly it is quite possible to overstep ourselves in these quasi-public medical affairs. We should, however, not be driven into them. Rather we should direct and guide. The doctor heretofore has moved in his own individual way among his patients and friends, seldom being called upon for anything of a public nature. It is necessary that each individual adapt himself to the new order of things and train himself so that he is receptive to and even willing to take the initiative in certain public medical trends. If we are to live up to our ideals the fact that we are not paid for these services does not mean that we should not grasp the opportunity to serve. If we lose the ideals which were so carefully preserved by the many notable medical men who have gone before and which we all had when we began the practice of medicine then and only then will we have failed.

A splendid opportunity is offered the profession to sell himself to the public at the State Fair at Lincoln. The opportunity there offered would certainly help very materially to offset some of the influence exerted by the various cults. The program is constructive and educational. The Nebraska State Medical Association, working through the Public Affairs Committee, has taken over the medical examination of adults, children, and the Four-H club members at the State Fair each year. Active support of the work should be our contribution toward better adults, better babies, and better boys and girls.

Criticism of Health Conferences has not been lacking. Most of this has been directed at, (1) the circus feature of the examination, (2) the inadequate remuneration to the doctors, (3) the claim that proper examinations cannot be conducted because of the many applicants. Most of these criticisms are easily refuted. At the State Fair just past examinations were given carefully by different general practitioners. Separate rooms are given to each physician. The examinations are in private and occupy about one-half hour for each individual, unless some special examination is required. The importance of the family physician was emphasized and the specialist was consulted only at such times as seemed necessary by the examining doctor. An attempt was made to conduct the examination in the same manner as though given in his own office. The importance of immunization and prevention was stressed. Proper remuneration to the doctors for this service has been and still is a serious handicap to wholesome cooperation by physicians. Only an extreme idealist would state that adequate compensation to the doctor for his time and services is not his by every equitable right. Lack of remuneration is to some extent our own fault and in part caused by the present economic conditions. It is unfortunate that the present arrangement of the Fair Board with the State Medical Association has been in existence during a time of economic stress. It is well known that the State Fair has been in serious financial straits for some few years past. Were this not so it is quite probable that sufficient funds would have been forthcoming to properly pay us for our work.

At the recent Fair there were one hundred ninety examinations in the children's department, one hundred fifty adult examinations and forty Four-H club examinations, making the total number examined three hundred eighty. Figuring that at least an average of three people will accompany those examined, makes a total of approximately 1500 paid admissions to the Fair. This, of course, helps the Fair, but it also helps us in that we come in contact with that many people and should enable us to sell ourselves and the newer advanced thoughts in medicine to the lay public. Incidentally seventy physicians helped with these examinations. Eighteen dentists and twenty-two nurses and technicions participated.

It would seem then that a splendid opportunity is offered to show the public the value of a healthy body and to impress upon them the newer thoughts in preventive medicine.

So let us all willingly cooperate, serving the public now as faithfully as in the past. The demand for this, as well as for other public service, is upon us. Let us educate ourselves so that we may adequately meet this demand and if necessary take the initiative in properly carrying it out.

—Floyd S. Clarke, Omaha

Long ago the doctors abandoned the idea that bleeding the patient would cure all his ailments, and sooner or later the same light may dawn on the tax-levying agencies.—Arkansas Gazette.

I told a fib today, daddy, confessed the little New York boy after his first day at school. They asked me where I was born, and it seemed so sissy to say the Woman's Hospital so I said the Yankee Stadium.—Ex.

COMMENTS ON THE AMERICAN CONGRESS OF RADIOLOGY

The First American Congress of Radiology met in Chicago, September 25th to 30th, 1933. President, Henry K. Pancoast, Philadelphia, Pennsylvania.

This was a joint meeting of the American Roentgen Ray Society, American Radium Society of North America and the American College of Radiology.

A total of 130 papers were presented covering the entire field of radiology. There were over 1,000 radiologists attending the meeting.

Dr. Franklin H. Martin. Director General of the American College of Surgeons, reported for 1932. 8,840 cases of cancer cures of five years or more. 18% of these cases Roentgen rays were the only therapeutic measure used, and in an additional 10% they were used as a supplementary form of treatment

Dr. J. C. Bloodgood made a strong plea for the use of Roentgen rays in breast cancer cases from four to six weeks before operation.

Dr. Kennon Dunham emphasized the necessity of the knowledge of pulmonary anatomy and deals especially with x-ray densities suggesting fibrosis as distinguished from pulmonary exudate.

Dr. W. Walter Wasson gave further facts about accessory sinus diseases in relation to chest diseases. Series of 150 children studied from birth through the first decade of life.

Dr. L. G. Cole: Living anatomy of small intestine compared with roentgenological findings.

Dr. James F. Case reviewed various functional disturbances of the colon.

Dr. Chas. L. Martin: Intensive divided dose x-ray for cancer of lip and mouth. Deep x-ray therapy over neck.

Dr. Ira I. Kaplan reported on protracted irradiation of neoplasms of mouth and pharynx. Reported fifty cases treated during 1932 and 1933. Used heavy filters of copper and continued treatment over a period of thirty to forty days.

Dr. U. V. Portmann gave a review of 250 cases from the records of the Cleveland Clinic in treatment of malignant diseases of the thyroid glands.

Dr. L. G. McCutchen gave a motion picture showing reduction of fractures and removal of foreign bodies, using oil-immersed shock-proof units, bi-plane flouroscopic control and special fracture device.

Dr. Ira H. Lockwood showed roentgenograms of breasts revealing distinct anatomical zones, pathological processes either inflammatory or neoplastic. Distinct addition to diagnosis of cancer of breast.

Dr. Geo. E. Pfahler gave his technique and results of irradiation in carcinoma of the breast; based upon a review of 1,129 cases treated more than three years ago.

Dr. Max Cutler gave his treatment of "bleeding nipple."

Dr. W. F. Manges gave an analysis of a group of primary carcinoma of the lungs. treated with deep x-ray therapy.

Dr. Leda J. Stacy: A study of uterine fibroma.

Dr. W. P. Healy: Radiation treatment of carcinoma of the cervix.

Dr. Karl Kornblum: Encephalography.

Dr. John D. Camp: Spinal cord lesions and their recognition by roentgenologic methods. Gave his technique and factor of errors found.

Dr. E. C. Ernst: Roentgenological considerations of sinus diagnosis with and without radioopaque oils.

Dr. R. U. Desjardins presented a classification of tumors from the standpoint of radiosensitiveness.

The following physicians were in attendance from Nebraska: Drs. J. F. Kelly, E. W. Rowe, R. C. Woodruff, C. E. Sayre, H. B. Hunt, L. W. Rork, W. L. Ross, A. F. Tyler, R. L. Smith and A. P. Overgaard.

—A. P. Overgaard, Omaha.

THE RED CROSS AND THE UNEMPLOYED

In almost every county of every state of the union, in Alaska and Puerto Rico, the Greatest Mother, during the past year, has given material assistance and helped to restore morale. Due to the far-reaching effects of unemployment, some 6,000,000 families, averaging altogether 25,000,000 people were dependent last winter upon the flour and clothing voted for their relief by congress. This consisted of 85,000,000 bushels of Federal Farm Board wheat and 844,000 bales of government cotton. The willing hands of hundreds of thousands of Red Cross volunteers helped in the conversion of this wheat into flour, and the making up of the cotton textiles into garments. 104,000,000 pieces of wearing apparel were thus made available to our less fortunate neighbors through the American Red Cross which, even with the nation-wide mobilization of volunteers to help in the colossal task, expended nearly half a million dollars in overhead costs.

Unemployment relief in various forms became the principal contribution of two-thirds of the nation-wide machinery of Red Cross chapters and branches. Types of aid extended included: food orders, school lunches, milk to school children, milk to families, yeast (purchased by individual chapters), for pellegra patients, redistribution of donated supplies,—food, clothing, fuel, toys, and money donations (for miscellaneous aid); collection of cans and jars for preserving surplus fruit and vegetables, given to families of the unemployed, medical attention, school supplies, and fuel. Red Cross chapters further extended relief by cooperating with other organizations. In conjunction with such public projects as road-building by the jobless, the local chapter workers investigated cases and supplied lists of heads of families acutely in need of work.

A popular method of giving assistance unostentatiously was the adoption of families. One well-to-do family would agree to supply all necessities for one or more "adopted" families, the Red Cross furnishing the data.

Children of the Junior Red Cross, in which are enrolled 7,000,000 pupils of our public, private and parochial schools, also did their bit. They provided warm clothing, shoes and school books for thousands of the children of the unemployed who otherwise could not have continued their studies. They earned money to furnish them with hot school lunches and milk. They sent the milk also to undernourished babies in the community.

Membership dues of the American public, repledged during the annual Roll Call, from Armistice Day to Thanksgiving, finance the nation-wide relief program of the American Red Cross.

DR. BRYAN M. RILEY, DEAN, CREIGHTON MEDICAL COLLEGE

Dr. Bryan M. Riley, Omaha internist and former head of the department of internal medicine Creighton University School of Medicine, has been appointed Dean of the School succeeding the late Dr. H. von W. Schulte.

DR. BRYAN M. RILEY, DEAN

Dr. Riley was born at Dawson, Nebr., in 1874. He received an A. B. degree from St. Mary's College, 1896, and the M. D. degree in 1900 from Creighton University.

He served as instructor in medicine from 1905 to 1907 and later was appointed professor and named head of the department of medicine. For 32 years he served as secretary of the administrative board of Creighton, and in 1932 was named chairman to succeed Dr. Schulte.

Dr. Riley holds a fellowship in the American College of Physicians, is past President of Omaha-Douglas County Medical Society and holds a membership in the Nebraska Mid-West Clinical Society.

Dr. Riley volunteered for service in the medical corps in the World war but was retained on the teaching staff of the medical school because of "essential occupation." He is a Major in the Medical Officers' Reserve Corps.

Dr. Riley is unmarried.

ALLERGY HINT IX

The deliberate ingestion of suspected foods often aids in the solution of the allergic problem.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT XV

Can a cured case recur? If the patient permits the situation which caused the inflammation to flare up the first time, to arise again, it will produce the same results as it did the first time. Therefore, no diagnosis is complete without a recognition of the precipitating cause, and no treatment is complete without a training in the maintenance of the newly acquired favorable condition, internally and externally.

—Miles J. Breuer, Lincoln.

EDITORIAL PARAGRAPHS

The Red Cross has never failed. With your help it never will. Repledge your support at the annual Roll Call, Armistice Day to Thanksgiving.

In a specific case it is asserted that one manufacturer increased the price of his product 175 per cent within a few hours after the NRA code for his industry was approved.

It has been observed that few, if any, persons in hospitals for the insane succumb to cancer. The observation is interesting but no explanation for fact has so far been forthcoming.

An improvement in the manufacture of hot water bags to keep the sides from adhering to one another has just been patented. It consists essentially in roughening the insides of the bag. It seems easy.

During a Symposium on cancer presented before the meeting of the American College of Surgeons in Chicago last month, it was brought out that over 12,000 cases of cancer have been cured in the last three years.

Dr. Claude A. Thompson, Muskogee, Okla., secretary-treasurer of Oklahoma Medical Society and editor of the *Oklahoma Medical Journal,* for twenty-four years, died October 2, a suicide. He had a record of the longest service as secretary-editor in the United States.

Approximately one-fifth of all pre-school and school children in the United States are suffering from malnutrition, inadequate housing and lack of medical care, according to the Children's bureau of the United States department of labor. In some regions says the bureau, the proportion of below par children is even greater.

The story comes to the editor that in a certain large city in this country some of "the best obstetricians" make a practice of arranging for the confinement of unfortunate young women and after confinement disposing of the babies at $100 each, the amount paid for the baby by the recipients to the doctor. This is selling children.

Dr. G. H. Morris, Oshkosh, filled with civic pride and of benevolent spirit, has for some time planned a playground for the town. Recently he has been doing his civic duty by allowing those who owe him to pay their bills by setting out trees and helping to beautify grounds south of Oshkosh which he plans on giving to the community when it is completed. He gave a picnic to over 100 who had been employed. The doctor supplied feed and watermelons.

An interesting story illustrating the interest of the doctor's wife in his profession and her efficiency under trying circumstances comes to the *Journal*. A Nebraska physician and his wife went fishing for muscalunge in the Lake of the Woods region far in the wilderness. The doctor was hooked in the head by a muskie plug. The wife promptly shaved the hair around the wound, administered a local anesthetic, cut out the hook and then sewed up the wound with the skill of a surgeon. This *Journal* has always sung the praises of the average doctor's wife and is glad to recount this additional evidence of her true worth.

From the lay press we gather news of the death at Victoria, B. C., of Dr. Van Beuren Knott, twenty-five and more years ago a well known surgeon at Sioux City, where he was born. The writer remembers hearing him read a paper before the American Medical Association meeting at Los Angeles, in 1911 advocating the removal of the appendix in all cases of appendicitis in any stage of the disease and the "walloping" that was given him by the prominent surgeons of the country present at the meeting. In less than five years after that his doctrine became the accepted method of almost the entire profession. Dr. Knott had not been in practice for a number of years and his name does not appear in the medical directory.

A recent Public Health Report on "Zinc in Relation to General and Industrial Hygiene" gives a summary in substance as follows: Zinc in drinking water is practically harmless. Metal fume fever or "zinc chill" is due to zinc contamination with other substances. Foods or beverages, with the exception of simple or chlorinated drinking water, should not be stored in zinc-lined or galvanized containers. Acid drinks and foods will invariably cause solution of zinc and the formation of simple compounds of zinc which irritate the stomach and may cause vomiting.

At the recent Conference in Chicago the following dictum was proposed by a delegate: Leadership at the top—A. M. A.: Policies at the bottom—States. In other words, the policies must originate in the constituent state organizations but the leadership to carry them out must be in the American Medical Association. Time was, when in 1901 or thereabout the American Medical Association was reorganized. That policy originated at the top with Dr. George H. Simmons then Editor and General Manager and his advisors and the House of Delegates approved. The several states were told what they must do and they did it and it was a "mighty" good thing.

The thirteenth edition of the American Medical Directory is in the making and the cooperation of the entire profession is again solicited to the end that the directory may lack little of perfection in names and data. In it, as in no other published directory, may one find dependable data concerning physicians, hospitals, medical organizations and activities. It provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested. Cards with blank space for professional and personal data are being mailed to all physicians and these should be promptly filled in and returned to headquarters in Chicago.

NECROLOGY

Harold Skelton, Daytona Beach, Florida; native of Page, Nebr.; medical education data unavailable; son of the late Dr. H. A. Skelton, Spencer, Nebr.; formerly instructor in Therapeutics in Columbia University, New York, and University of Arkansas; died September 19, 1933, aged thirty-two years.

A widow and son survive.

William J. McCrann, Omaha, retired; native of Kentucky; Louisville Medical College, 1883; practitioner at Tecumseh, from 1889 to 1892, thereafter until 1912 in practice in South Omaha; after which he moved to Omaha; in earlier years prominent in insurance orders and sometime delegate to the Democratic national convention; leader in community affairs for many years; a family physician much in demand in diseases of children; member, Nebraska State Medical Association; the father of 14 children; died October 14, 1933, aged seventy-eight years.

A widow, eight daughters and two sons—Dr. W. J. McCrann, Jr., Omaha, and Dr. P. M. McCrann, Rock Springs, Wyo., survive.

CLINICAL ASSEMBLY AT NORTH PLATTE

The clinical assembly of the Eleventh and Twelfth Councilor Districts to be held at North Platte, November 6 and 7, offers a pretentious program, with which will be interspersed several luncheons and a banquet at which Dr. Lucien Stark, Dr. Morris Nielsen and Dr. B. F. Bailey will speak. The list of subjects and speakers follows:

"Sexual Neuroses As Problems in General Practice," Dr. A. L. Cooper, Scottsbluff.

"A Film Showing the Methods of Diagnosing Intracranial Injuries and Their Termination," Dr. K. S. J. Hohlen, Lincoln.

"Heart Clinic," Clinical Demonstration, Dr. Adolph Sachs, Omaha; Pathologic Specimen Demonstration, Dr. B. C. Russum, Omaha.

"Medical Economics," Dr. A. L. Miller, Kimball.

"The Problem of Sinusitis," Dr. A. L. Dunn, Omaha, Dr. W. P. Wherry, Omaha.

"The Interdependence of Medicine and Dentistry," Dr. Boyd Gardner, Mayo Clinic, Rochester, Minn.

"Fractures of the Femur," Dr. R. W. Fouts, Omaha.

"Modern Practical Infant Feeding," Dr. Floyd S. Clark, Omaha.

"Goitre," Dr. Pemberton, Mayo Clinic, Rochester, Minn.

THE SOCIETIES

A regular meeting of the **Lancaster County Medical Society** was held at society headquarters, October 17, President Zimmerer in the chair. Fifty-two physicians were present. Dr. E. K. Rider presented case reports of twins who are pseudo-hermorphrodites. He also reviewed the literature on the subject. Dr. L. J. Owen read a paper on "Allergic Manifestations of the Skin," which prompted considerable discussion. Dr. A. L. Smith discussed the question, "When Does the Heart Need Treatment?"

Resolutions on the death of Dr. A. R. Mitchell were adopted by a rising vote.

The **Otoe County Medical Society** met September 14 at St. Mary's hospital, Nebraska City. Dr. E. E. Hansen and Dr. Harold Morgan, Lincoln, spoke on certain phases of gynecology. Dr. Miles J. Breuer, Lincoln, spoke of recent discoveries on arthritis. He mentioned red meat as an important part of an arthritics' diet. Dr. W. C. Kenner, Nebraska City, was elected president; Dr. Roland Loder, Syracuse, secretary-treasurer, and D. D. Stonecypher, Nebraska City, delegate.

The **Omaha-Douglas County Medical Society** met on the evening of September 26, President Hamilton in the chair.

Dr. H. J. Clawson of the Department of Pathology, University of Minnesota Medical School, talked on the "Pathogenesis of Acute Rheumatic Fever."

The **Madison Six County Medical Society** met at the Episcopal Parish house, Norfolk, October 17. Following a dinner to about forty physicians and their ladies, Dr. A. E. Bennett, Omaha, gave a paper on "Some Recent Experiences With Epidemic Encephalitis." He reported 11 cases. Most of the patients recovered, without sequelae. Spinal puncture was done in all cases and convalescent serum was used.

Dr. L. S. McGoogan, Omaha, reported two cases of purpura in pregnancy. He conceives purpura to be an infection. All known hemostatics were used and patients eventually recovered. But forty-seven cases are reported in the literature.

The autumn meeting of the **Third Councilor District**

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AGRANULOCYTIC ANGINA*

ADOLPH SACHS, M. D.,
Professor of Medicine, Creighton University Medical College,
President, Nebraska State Medical Association,
Omaha, Nebraska.

Schultz⁽¹⁾ reported six cases of fatal leukopenia and granulopenia in 1922, which he named agranulocytosis, and a year later, Friedmann⁽²⁾ suggested the term "agranulocytic angina." Since then a great many articles have appeared criticising the names offered and suggesting other names more truly descriptive of the disease, however, it has greatly added to the confusion of the general practitioner, as to just what type of disease he is actually dealing with.

A few of the names offered are: Malignant neutropenia, pernicious neutropenia, putrid sore throat, malignant sore throat, agranulopenia, agranulocytopenia, hypo-granulocytosis and agranulemia. All of the foregoing names have some advantage in being more descriptive than others. but it seems best to employ the terms granulopenia and agranulocytic angina, because they are the ones that are most frequently used.

Some of the older writers such as Gubler⁽³⁾, 1857, Trousseau⁽⁴⁾, 1865, and Turk⁽⁵⁾, 1907, described similar conditions but the disease was not forcibly brought to our minds until Schultz reported his cases in 1922. When Schultz first described these cases he thought them to be a disease entity and it is still regarded as such by some of the authors. He described only the rapidly fatal type and thought it to be a disease peculiar to women around forty, who were approaching the menopause. Since that time many excellent articles have appeared in the literature

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*I wish to thank Doctors Kiefer, Niehaus, Kully, DeLanney and Gilligan, for permitting me to report cases 2, 3, 4, 5 and 6. I also wish to thank Dr. Hall for serial blood counts on cases 4, 5 and 6.

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showing that there are different phases of this malady, and it is well to classify them under primary and secondary types. Roberts and Kracke(6), likewise Piersol and Steinfield(7) have classified the different types of granulopenia in a most excellent manner. Piersol and Steinfield classify them as follows:

Primary Granulopenia:
a. Acute (Schultz).
b. Chronic, recurrent.

Secondary Granulopenia:
a. General Infections
  Influenza
  Typhoid
  Some Exanthemasa
  Sepsis, etc.
b. Focal Infection
c. Chemical (Arsaphenamine Benzene)
d. Irradiation (X-rays, radium)
e. Blood diseases (Leukemia, splenic diseases, aplastic anemia, etc.)

I feel that the primary group should be divided into the acute, subacute and chronic recurrent. The subacute type is added because two of our cases were subacute and not of a chronic recurring character.

The acute fulminating type (Schultz) is quite characteristic and has been described so often that only the salient features will be mentioned. The disease usually occurs in middle aged women with a negative past history except for weakness and exhaustion. However, it may occur at any age and likewise it frequently attacks men as well as women. The onset may be sudden with a severe chill or it may start with a general malaise and a sore thoat. The sore throat varies from a slight redness to an ulcerative form with a large amount of edema. The edema and ulceration may rapidly progress. Ulcerations of other mucous membranes may follow. Any part of the gastro-intestinal tract from the pharynx to the anus may be involved. Ulcerations also occur in the vagina and bladder. The cervical and submaxillary glands may become enlarged, which may or may not be painful. Jaundice is quite common but it is usually mild. The fever varies although it rises rapidly, especially toward the end. Many cases die within 24 hours or last several days. The blood count is characteristic, and makes the diagnosis easy. The red cells show little change. A marked leukopenia and granulopenia rapidly occur. The picture has been so often described that no further mention need be made.

The subacute primary type occurs at any age, but the ones I have seen occurred in a younger class of women who presented the same symptoms as the foregoing, only they lasted from one week to two or three months. During that period. two or three remissions may take place and it might appear as though your patient was going to get well; suddenly the last and fatal attack occurs and she dies. There are some milder forms of this type from which recoveries have been reported. The permanent recoveries reported rarely occur with an extremely low white count (200 or less).

The chronic recurrent type is mostly found in constitutionally inferior individuals. By this I mean individuals who tire easily, complain of exhaustion, are of a neurotic nature and usually are what Roberts and Kracke classify as granulopenic types, with a low leukocyte count and a low polynuclear count. They are subject to sore throats and any mechanical insult to mucous membranes usually precipitates an attack which is sometimes fatal. They are frequently poor operative risks and the mere extraction of an abcessed tooth may precipitate serious results.

The secondary granulopenias follow some form of infectious or debilitating disease, such as the classification indicates. It is frequently a terminal event subsequent to a prolonged chronic sepsis similar to a terminal bronchial pneumonia. I have seen several terminal agranulocytic anginas, and think that they are more common than the literature indicates.

ETIOLOGY

The etiology of primary granulopenias is still unknown. Many theories are offered but none as yet have shown definite proof that the exact causative factor has been found. Many organisms have been given credit as being possible etiologic agents, but none have as yet stood the acid test—namely, that of being constantly isolated, reproducing the disease and again being recovered.

Lovett(8) isolated B. pyocyaneus from her patient's throat and produced a granulopenia in guinea pigs, but others have not corroborated this experiment. The Vincent's organisms found in the mouths of most cases have no etiologic bearing and are probably secondary invaders often found in many individuals, especially if their mouths show a lessened resistance as is frequently found in many infections. Various forms of streptococci have been reported, especially hemolytic streptococci. I(9) reported a case in 1928 from which we isolated a hemolytic streptococcus and injected the same into rabbits, guinea pigs and rats, but no definite conclusions could be made. All other work thus far on streptococci has also never proven them to be the specific etiologic agents. Unquestionably some of the older streptococcic sore throats reported in the past were true primary granulopenias, but not recognized as such. B. Coli, staphlococci, pneumococci and many other organisms have been found, but are secondary invaders and not etiologic factors.

Experimental work with benzene may produce granulopenias in rabbits but cannot be regarded as a factor in agranulocytic anginas. Very few workers exposed to benzene ever develop a benzene poisoning. Fried and Dameshek(10) reported experimental granulopenias in rabbits produced by salmonella suipestifer but this again offers no help in determining the etiology in humans. Arsphenamine produces a granulopenia in some people, but only in a small number.

Overwhelming sepsis plays a role in many secondary granulopenias, but does not in the primary cases. Pepper believes that the granulopenia may be explained on an allergic basis; however, eosinophilia common to most allergic individuals is rare in agranulocytic angina. Endocrine disturbance again is blamed, as it often is in many diseases of doubtful etiology, but no proof is available to show any definite relationship.

Roberts and Kracke have shown that granulopenic individuals exist. In blood counts on 8,000 individuals, 25% were found to be granulopenic, 50% were in women complaining of fatigue, weakness, exhaustion and nervousness. This has much in its favor and some individual idiosyncrasy or endogenic factor may be at fault similar to the unknown factor in pernicious anemia. Morris(11) reported a good result in a case of granulopenia by the injection of concentrated gastric juice (addisin) which is thought to be the unknown factor in pernicious anemia. This report was given at the recent meeting of the College of Physicians in Montreal. Whether or not an unknown factor or constitutionally inferior bone marrow exists is an open question. Most bone marrows examined are reported as hypoplastic, but some reports of hyperplastic marrow(12) are also at hand. X-ray and radium are also reported as etiologic agents, but no further mention need be made of them. One could go on theorizing indefinitely, but the fact still remains that the etiology of agranulocytic angina is unknown.

PATHOLOGY

The pathology has been described in so many articles that no time will be given to it in this paper. The bone marrow shows a normal erythropoietic function but the granulocytes are scarce. It might be well to review a few interesting facts about our leukocytes because it is not definitely known whether it is an aplasia of the bone marrow, or a peripheral destruction of the white cells that causes our granulopenia. The former is most likely at fault. Florence Sabin(13) and her co-workers have added greatly to our knowledge of the physiology of the bone marrow. She has shown that the white blood cells appear in the peripheral circulation with a definite rythmicity and vary from day to day.

They remain at a constant level through a remarkable mechanism with which nature provides us. They vary from 5,000 to 10,000 throughout the day and are highest from three to six p. m. The exact mechanism of delivery that permits the different white cells to reach the periphery from their point of origin is not clearly understood, likewise the replacement and rearrangement of their relative proportion is also not definitely known. The mechanism of cell delivery involves both a vasomotor and a chemical factor. In addition, there must be a mechanism of maturation which allows the various older and younger forms to appear at times when the bone marrow is stimulated beyond normal limits. Whether it be increased maturation or increased delivery from reserve pools is a question still open to discussion. The stimulation may be a chemical, a mechanical or a vasomotor phenomenon.

Some men claim that food increases the leukocytes, especially the albumin and fats. This is called digestive leukocytosis. Others deny that it exists, claiming that the rise of leukocytes occurs irrespective of the type of food. Work causes a temporary leukocytosis lasting from 1 to 3 minutes. If one rests and then resumes work again, another leukocytosis occurs. An injection of adrenalin produces a leukocytosis. Pilocarpine produces a leukocytosis, but if a splenectomy is performed, no leukocytosis occurs. The leukocytes are greater in number in an upright position than in a recumbent posture. This may be due to a change of the heart beat and an increased flow of blood. It is believed by some that the blood cells cling to the vessel walls and with an increased heart beat are forced out into the peripheral circulation. This is demonstrated by the injection of strophanthin which is rapidly followed by a rise in the leukocytes.

The leukocytes vary in the different locations of the body, namely in the rabbit's ear, jugular vein, the abdominal vessels, and the heart's blood. The rise of leukocytes is greater on the change of position in a nervous person than in a phlegmatic individual. Stimulation of the vagus causes a drop of leukocytes; heating causes a rise. Changes in blood pressure and vasomotor changes of all types may cause a change in the leucocyte count. Shock or anaphylaxis causes a leukopenia. This may be due to a different distribution of the cells so that they do not enter the peripheral circulation. Leukopenia may show a lessened resistance of the white cells (an increased fragility) same as an increased fragility of the red cells, in hemolytic icterus. Leukocytosis causes an increased resistance of the white cells because they are younger and less fragile. An infection in a leukemic individual causes a drop of leukocytes and a rise of leukocytes in normal people. An increase in hydrochloric acid causes an increase in white cells. Sodium bicarbonate causes a decrease. This may be due to a change in the acid base equilibrium.

A red blood cell lives from 20 to 30 days; a white blood cell lives from 2 to 4 days. Sabin says 1/5 of all leukocytes die in 24 hours. The destruction of polymorphonuclears occurs in large showers, the lymphocytes and monocytes less so. The rhythmic rise and fall of the polys occurs every hour, the lymphocytes every half hour. When a leukocyte dies, its motion stops, the granules lose their ameboid motion, the nucleus curls up and becomes rounded. These are the non-motile cells seen in vital staining. The polys die in showers and may give off a ferment to stimulate bone marrow to send out new cells. This is called nucleotide. Normally this ferment is supposed to be present in all bloods.

One could go on and on giving interesting reports from the literature about the leukocytes, but the above shows how easily the normal leukocyte counts vary and why.

TREATMENT

The results of the various forms of therapy recommended in agranulocytic angina are hard to evaluate because remissions occur without any treatment, and likewise remissions are reported from various forms of therapy, indicating that it may not be the treatment given that causes the improvement as much as it is the patient's own resistance.

Blood transfusions are highly recommended, but some men claim they have seen direct harm from them and others report excellent results. Convalescent serum is of no value because the patient rarely develops any great immunity against this type of infection.

Leukocytic extracts have been tried with varying results but not sufficient data is at hand to prove them to be of any definite value. Jackson(14) and his co-workers report excellent results from nucleotide (K96) and have demonstrated that the granulocytes and the whole white count seem to increase definitely about the fifth day, the same as the reticulocyte rise in pernicious anemia after liver or like therapy.

This form of therapy is based on physiological principles and seems the most logical that we have to date, however, even though the granulocytes rise and it is often given early, the patients do not recover. Some cases in which K96 has been given early seem to get no benefit, and where reactions occur, seem to be made worse by the treatment. The acute fulminating type die rapidly and all treatment seems to be of no avail. All that can be hoped for is some symptomatic relief because they usually progress so rapidly that nothing seems to stay this malignant process. In the subacute types I have seen the granulocytes rise around the fifth day, after the use of K96, and in one case the rise continued until the count reached over 60,000. We were suspicious of leukemic phase, but the cells were not characteristic. Another subacute case likewise had a rise of the granulocytes and total white count after the fifth day, but recurrent attacks developed in spite of the treatment. Whether or not these remissions would occur without the nucleotide is open to dispute. Both of these cases went on to fatal termination, showing that although the granulocyte response occurred it was not able to cure the disease. Doan(15) gives an excellent review of the literature as well as excellent original work on the use of nucleinate therapy. To date, the use of pentose nucleotide seems the most rational form of therapy that has been advised even though it does not seem curative.

Connor(16) advises the use of bone marrow in these cases, however, no definite permanent results are as yet reported.

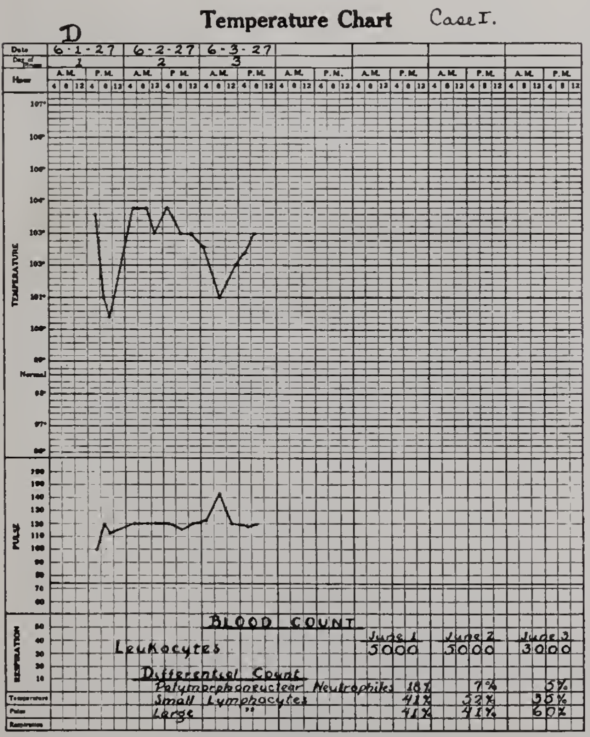
Fetal liver, liver extract by mouth, intramuscular and by intravenous routes have been of no permanent value. Spleen pulp and other organ extracts likewise are of little value. Arsphenamine so often used in Vincent's infections should be used cautiously on account of its danger in damaging the bone marrow. Foreign proteins, antitoxin (diphtheria) vaccines, induced chemical abcesses, have been tried but no real benefit derived.

The various forms of dyes have been used but seem to be of little value. Colloidal sulphur causes a leukocytosis in luetics, but is of little value in agranulocytic anginas. Glucose and fluids give symptomatic relief the same as found in any severe infection. Calcium gluconate was recommended but the literature contains no further reports as to its value.

Splenectomy has been considered but in patients that are such poor operative risks, it seems to be a dangerous procedure to offer.

X-ray and radium therapy has been highly recommended and should be tried if the operator is cautious about the dosage so as not to do more damage than good. Stimulating doses are recommended but what is stimulating to one person may be destructive to another especially with an aplastic marrow to start with. The gauntlet of drugs and dyes as local applications to the ulcerations have been heralded, but again what helps one is of no value in the next case.

The best rationale is to give symptomatic relief, do not overtreat, use transfusions unless a depression of the granulocytes occurs after its use. The use of x-ray may be of some value. The most rational therapy to date is probably the use of nucleotides. I trust that something will be found in the near future that will offer us more help than we have at present.



BLOOD COUNT

	June 1	June 2	June 3
Leukocytes	5000	5000	3000
Differential Count			
Polymorphonuclear Neutrophiles	18%	7%	5%
Small Lymphocytes	41%	52%	35%
Large "	41%	41%	60%

Case 1—Mrs. D.

CASE REPORTS

I wish to report eight fatal cases of Granulopenia, or Agranulocytic angina which cover the various groups described in the classification given.

Case 1. PRIMARY ACUTE TYPE. Referred by Dr. T. Mrs. D., aged 47, widow. May 31, 1927. Family history, negative. Past history: Usual children's diseases. Typhoid. Rheumatism, 2 attacks. Tonsillectomy.

Present illness: Patient referred for headaches, 5/31/27. June 1, 1927, could not return to my office on account of a severe attack of sore throat. Sent to hospital. Course 51 hours. Fatal.

The following temperature chart will give the blood counts. The therapy was symptomatic. Antitoxin, fluids, stimulation, arsaphenamine. At this date, no specific therapy was recommended in the literature. The course was rapid and fatal.

Case 2. PRIMARY ACUTE TYPE. Referred by Dr. K. Mrs. St., aged 47, married. October 20, 1930. Family historp, negative. Past history, negative except fibroid removed 4 months previous.

Present illness: Patient had sudden attack of sore throat starting twenty-four hours prior to the time I saw her. I was called in consultation on account of extreme prostration.

Examination: Negative except for slight pallor, and patient seemed more ill than her physical findings indicated. Throat red, with grayish membrane on left tonsil. No odor. Course of disease, forty-eight hours. Fatal.

Blood counts: Sept. 8, 1930, by Dr. K. 1 month prior to last illness, Reds, 3,570,000; W.B.C., 5,800. Oct. 20, 1930, W.B.C., 500 per c. m. No Polys.

Case 3. PRIMARY ACUTE TYPE. Referred by Dr. N. Mr. A., aged 50, married. March 21, 1932. Family history, negative.

Past history: Gastric ulcer, 1915. Hemorrhoids, 1915. Recurrence of ulcer, 1925. Jan. 11, 1932, had a ruptured appendix. A stormy course followed, but apparent recovery. The following blood counts are given to show the patient was not a granulopenic type of individual.

Date	Blood	Count	E	A	J	St.	Seg.	L.	M
1/11/32	WBC	14,500	0	0	0	19.5	58	17	5
2/ 6/32	WBC	18,200	..	--	--	------	----	----	--
2/12/32	WBC	9,500	1	0	0	7	74	18	0

The patient was dismissed apparently on the road toward recovery.

Present illness: Patient had a mild sore throat 3/19/32, severe the next day. He was sent to the hospital on account of the extremely rapid progress of symptoms and prostration, 3/20/32. I saw him in consultation 3/21/32. Patient in extreme prostration. Marked edema of throat and neck. No membrane. Patient died 3/22/32. Treatment, nucleotide transfusions, fluids, etc. Rapid progress. Treatment of no avail.

Blood Counts:

3/20/32	W.B.C.	400	2 granulocytes
3/21/32	W.B.C.	400	0 granulocytes

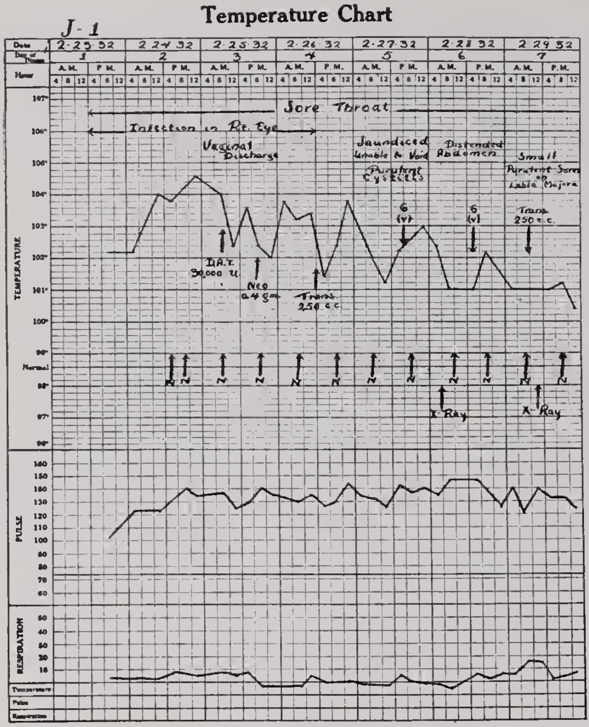
Case 4. PRIMARY SUBACUTE TYPE. Referred By Dr. K. Mrs. J., age 24, married. February 23, 1932.

Family history: Negative.

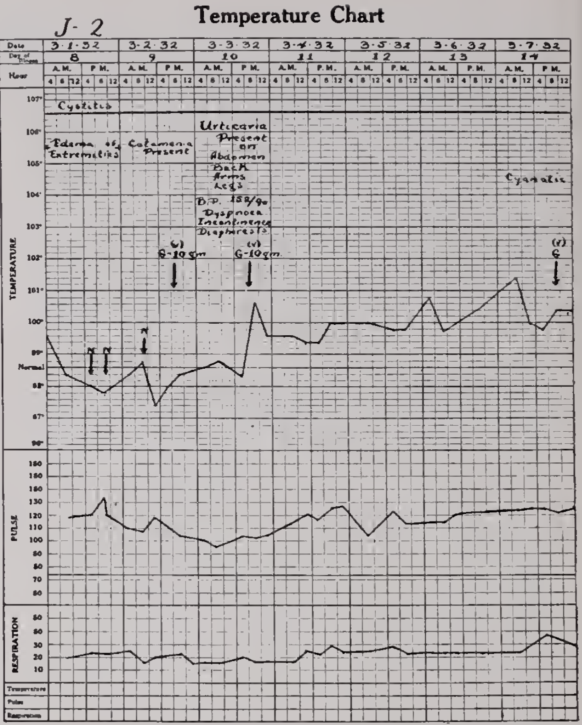
Past history: Usual children's disease. Pelvic operation 3 months ago.

Present illness: Sore throat, February 21, 1932. Sent to hospital by her physician on account of severity of illness, February 22, 1932. Course of illness, 22 days. Died March 13, 1932.

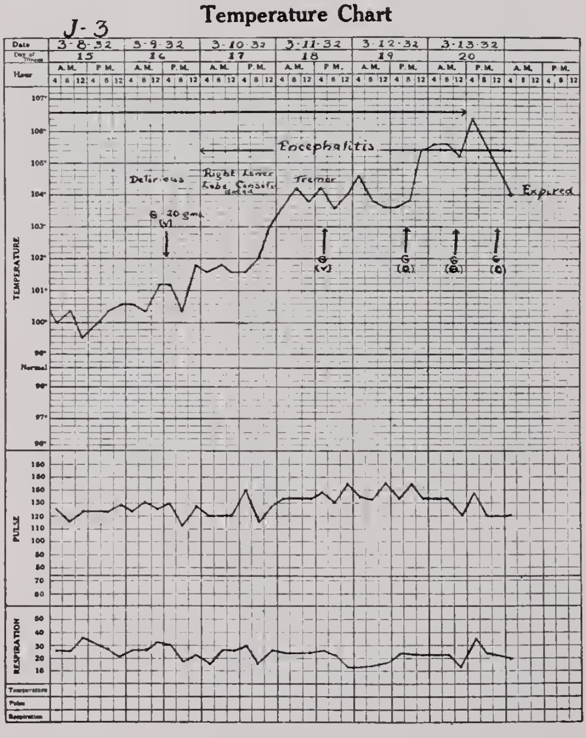
This patient had pentose nucleotides, x-ray, arsaphenamine, antitoxin, glucose, transfusions. The transfusions seemed to make her worse, so were dis-



Case 4—Mrs. J.

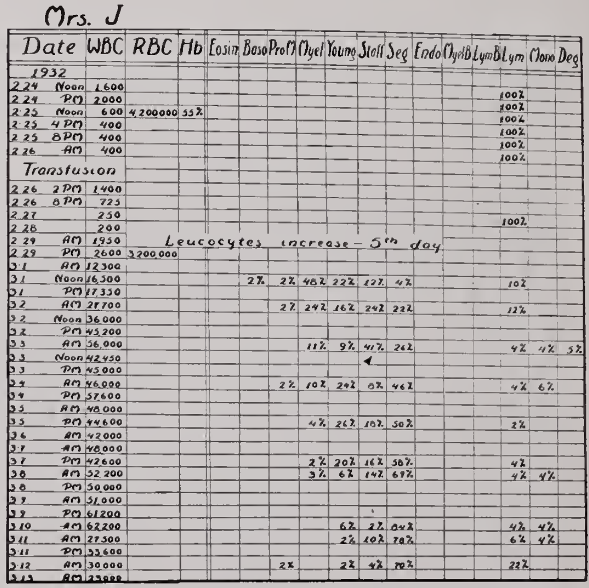


Case 4—Continued.



Case 4—Concluded.

continued. After the nucleotides were given the granulocytes and W. B. C. response occurred on the 5th day. The patient improved somewhat and the leukocytes rose to 62,000 as indicated on the following charts. Many complications interferred with her progress, namely, conjunctivities, cystitis, ulcerations of the vulva and rectum, pyelitis, toxic rash, bronchial pneumonia (which cleared up). An encephalitis was the cause of her death. Autopsy refused.



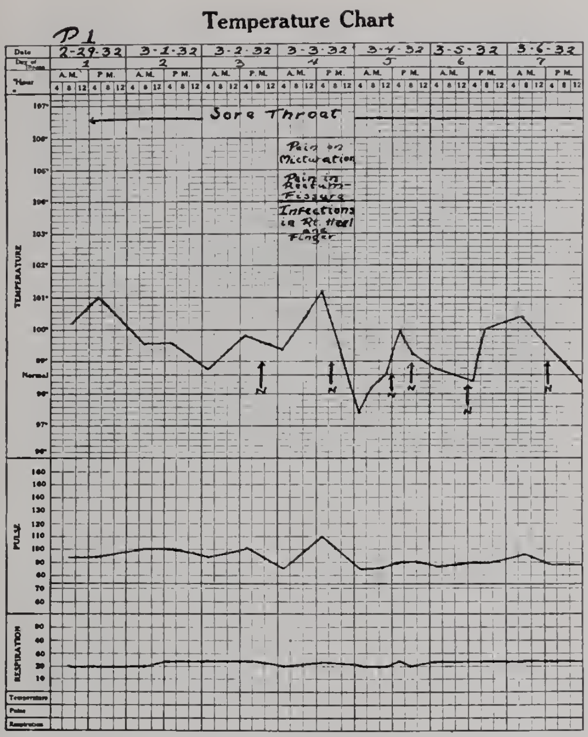
Mrs. J

Date		WBC	RBC	Hb	Eosin	Baso	ProM	Myel	Young	Stab	Seg	Endo	MyelB	LymB	Lym	Mono	Deg
1932																	
2.24	Noon	1,600													100%		
2.24	PM	2000													100%		
2.25	Noon	600	4,200000	55%											100%		
2.25	4 PM	400													100%		
2.25	8PM	400													100%		
2.26	AM	400													100%		
Transfusion																	
2.26	2PM	1,400															
2.26	8PM	725															
2.27		250													100%		
2.28		200															
2.29	AM	1950	Leucocytes increase—5th day														
2.29	PM	2600	3200,000														
3.1	AM	12,300															
3.1	Noon	16,500				2%	2%	48%	22%	12%	4%				10%		
3.1	PM	17,350															
3.2	AM	27,700					2%	24%	16%	24%	22%				12%		
3.2	Noon	36,000															
3.2	PM	45,200															
3.3	AM	36,000						11%	9%	41%	26%				4%	4%	5%
3.3	Noon	42,450								◄							
3.3	PM	45,000															
3.4	AM	46,000					2%	10%	24%	8%	46%				4%	6%	
3.4	PM	57,600															
3.5	AM	48,000															
3.5	PM	44,600						4%	26%	18%	50%				2%		
3.6	AM	42,000															
3.7	AM	48,000															
3.7	PM	42,600						2%	20%	16%	58%				4%		
3.8	AM	52,200						3%	6%	14%	69%				4%	4%	
3.8	PM	50,000															
3.9	AM	51,000															
3.9	PM	61200															
3.10	AM	62,200							6%	2%	84%				4%	4%	
3.11	AM	27,300							2%	10%	78%				6%	4%	
3.11	PM	33,600															
3.12	AM	30,000					2%		2%	4%	70%				22%		
3.13	AM	23000															

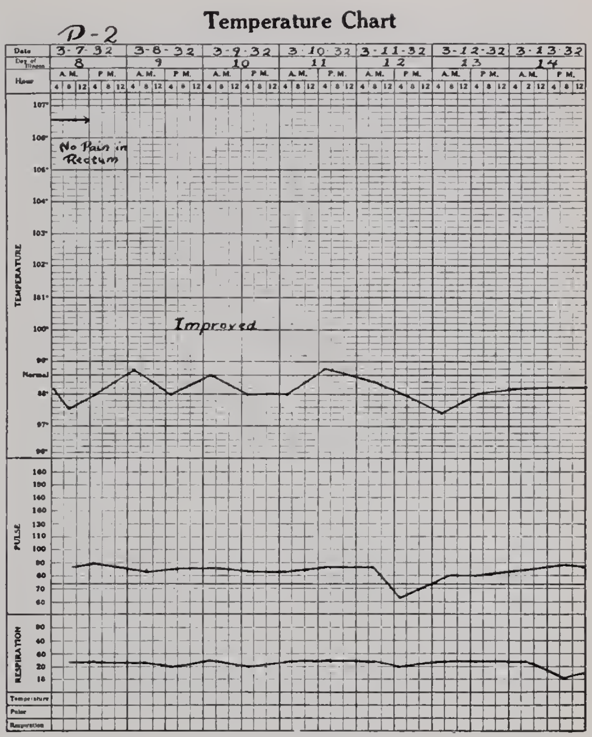
Case 4—Mrs. J. Blood Count.

KEY SHEET

N.—Nucleotide
D.A.T.—Diphtheria Antitoxin
NEO.—Neosalvarsan
TRANS.—Transfusion
G.—Glucose
L.—Liver Extract
M.—Intramuscular
V.—Intravenous
Q.—Subacutaneous



Case 5—Miss P.



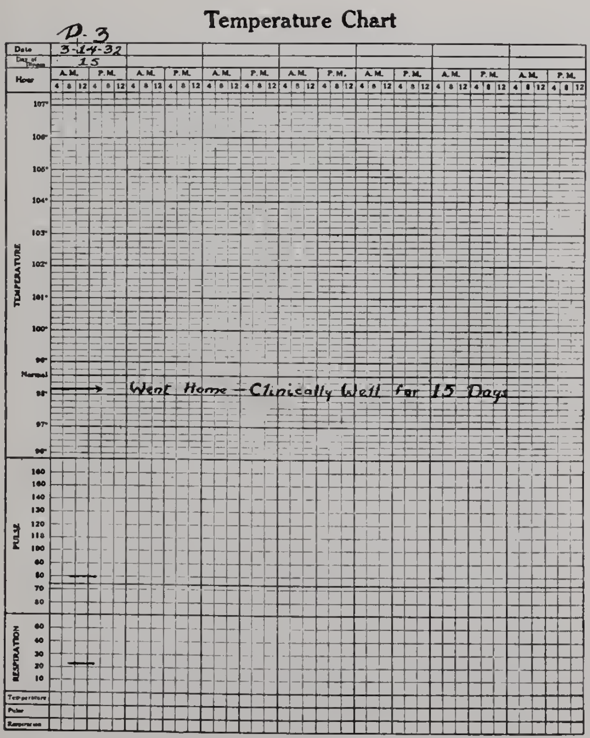
Case 5—Continued.

Case 5. PRIMARY SUBACUTE TYPE. Referred by Dr. K. Miss P., aged 20, nurse. (Nurses and physicians often acquire this disease).

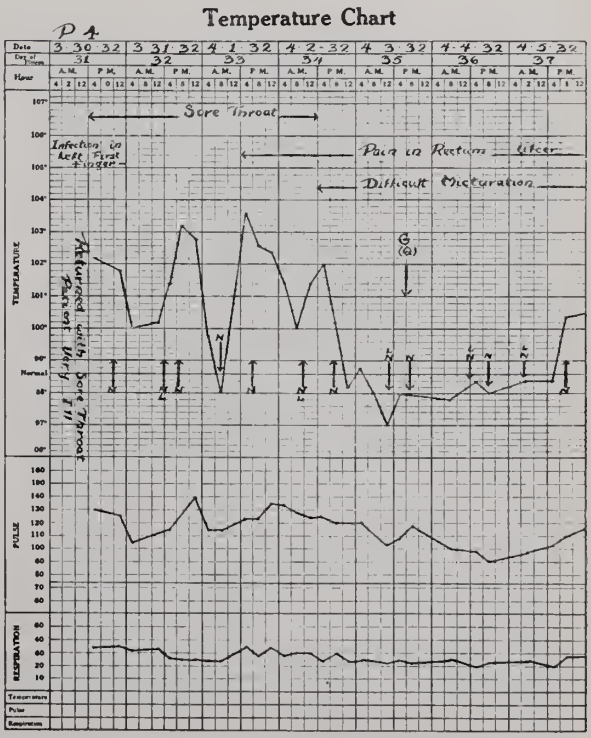
Family history: Negative.

Past history: Negative.

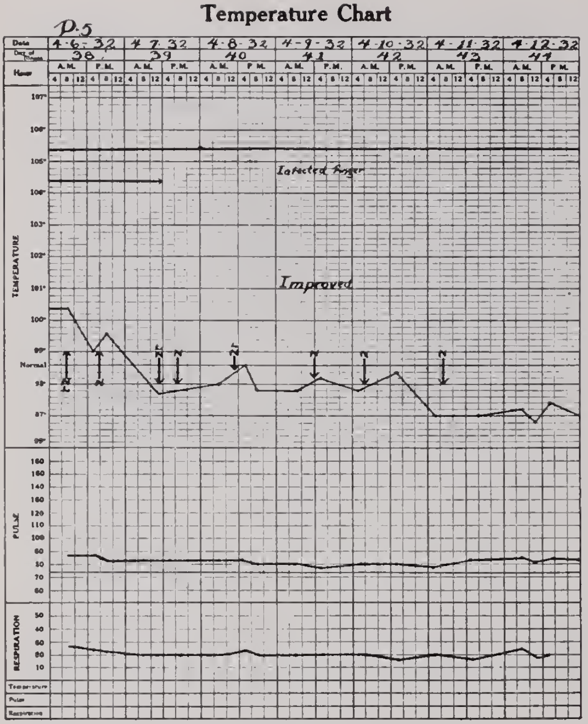
Present illness: Sore throat February 27, 1932. Sent to hospital February 29, 1932. This patient nursed Case 4 for a while, but its relation-



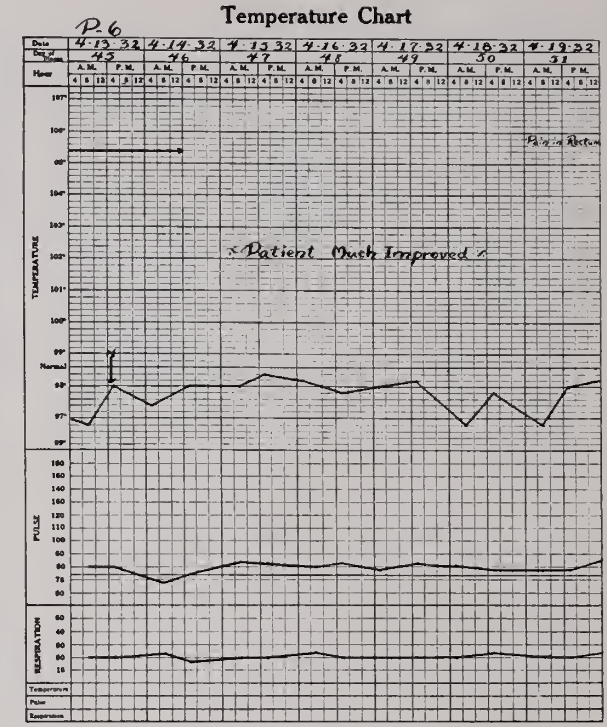
Case 5—Continued.



Case 5—Continued.



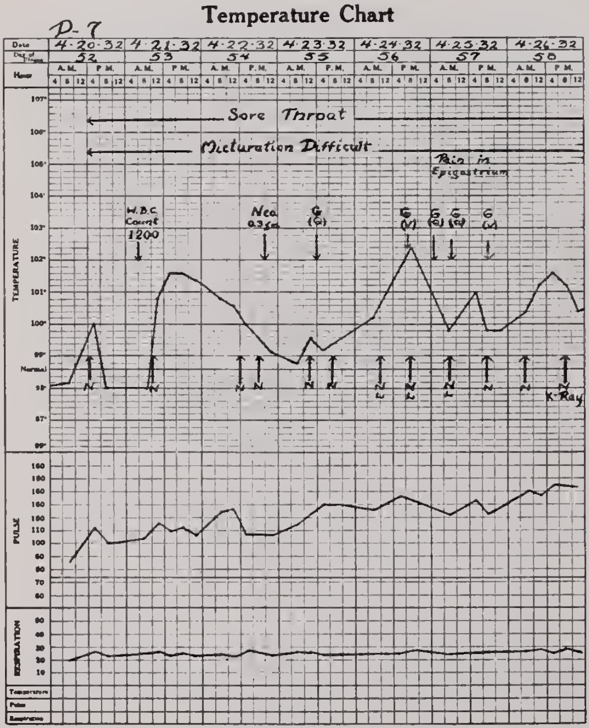
Case 5—Continued.



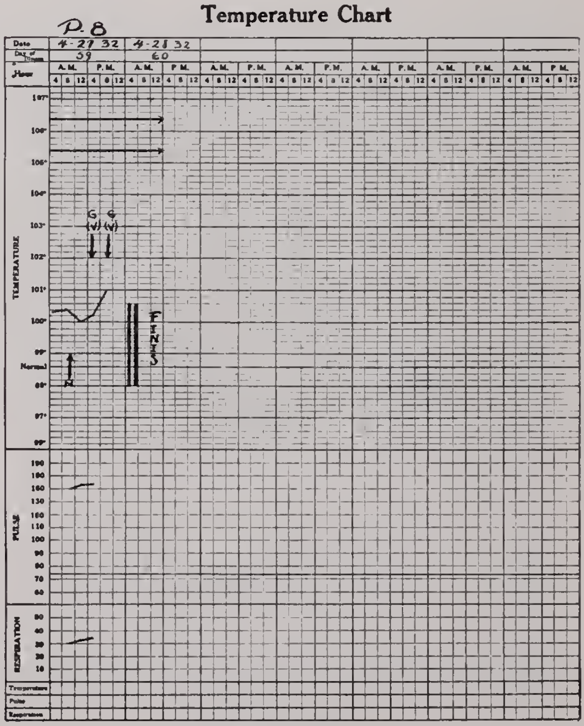
Case 5—Continued.

ship to the etiology in her case is doubtful. No other nurses affected. This patient had had 3 attacks during a short period of time. Twice she apparently seemed to be getting well, when another attack occurred. Treatment can be followed from the following charts.

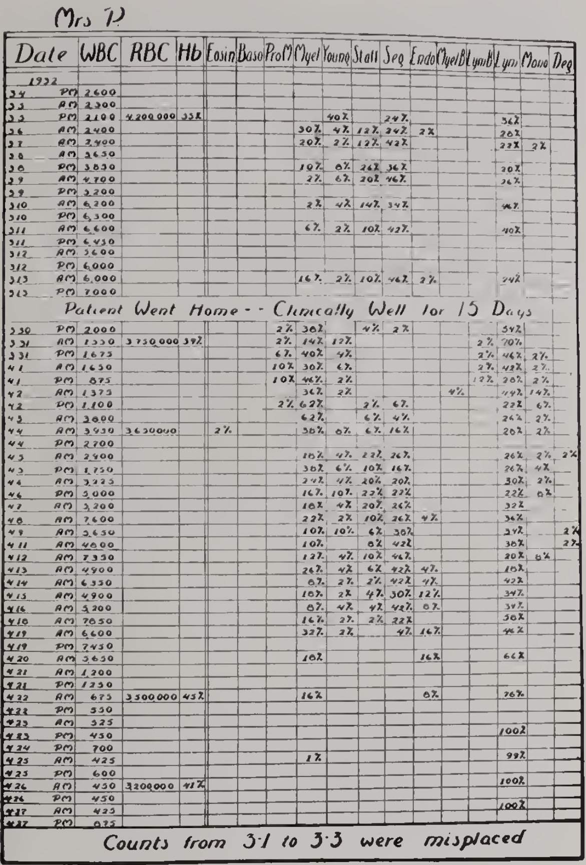
Course February 27, 1932 to April 28, 1932. Two months. Died April 28, 1932.



Case 5—Continued.



Case 5—Concluded.



Mrs P.

Date	WBC	RBC	Hb	Eosin	Baso	ProM	Myel	Young	Stab	Seg	Endo	MyelBl	LymBl	Lym	Mono	Deg
1932																
3 4 PM	2600															
3 5 AM	2300															
3 5 PM	2100	4,200,000	35%					40%		24%				36%		
3 6 AM	2400						30%	4%	12%	24%	2%			20%		
3 7 AM	2,400						20%	2%	12%	42%				22%	2%	
3 8 AM	3650															
3 8 PM	3830						10%	8%	26%	36%				20%		
3 9 AM	4,700						2%	6%	20%	46%				26%		
3 9 PM	3,200															
3 10 AM	6,200						2%	4%	14%	34%				46%		
3 10 PM	6,300															
3 11 AM	6,600						6%	2%	10%	42%				40%		
3 11 PM	6,450															
3 12 AM	5600															
3 12 PM	6,000															
3 13 AM	6,000						16%	2%	10%	46%	2%			24%		
3 13 PM	7000															
Patient Went Home -- Clinically Well for 15 Days																
3 30 PM	2000					2%	38%		4%	2%				54%		
3 31 AM	1330	3 750 000	34%			2%	14%	12%					2%	70%		
3 31 PM	1675					6%	40%	4%					2%	46%	2%	
4 1 AM	1650					10%	38%	6%					2%	42%	2%	
4 1 PM	875					10%	46%	2%					12%	28%	2%	
4 2 AM	1375						36%	2%				4%		44%	14%	
4 2 PM	1,100					2%	62%		2%	6%				22%	6%	
4 3 AM	3000						62%		6%	4%				26%	2%	
4 4 AM	3950	3630000		2%			50%	8%	6%	16%				20%	2%	
4 4 PM	2700															
4 5 AM	2400						18%	4%	22%	26%				26%	2%	2%
4 5 PM	1,750						38%	6%	10%	16%				26%	4%	
4 6 AM	3,225						24%	4%	20%	20%				30%	2%	
4 6 PM	5,000						16%	10%	22%	22%				22%	8%	
4 7 AM	3,200						18%	4%	20%	26%				32%		
4 8 AM	7,600						22%	2%	10%	26%	4%			36%		
4 9 AM	3,650						18%	10%	6%	30%				34%		2%
4 11 AM	4800						10%		8%	42%				38%		2%
4 12 AM	7350						12%	4%	10%	46%				20%	8%	
4 13 AM	4900						26%	4%	6%	42%	4%			18%		
4 14 AM	6350						8%	2%	2%	42%	4%			42%		
4 15 AM	4900						18%	2%	4%	30%	12%			34%		
4 16 AM	5200						8%	4%	4%	42%	8%			34%		
4 18 AM	7850						16%	2%	2%	22%				58%		
4 19 AM	6600						32%	2%		4%	16%			46%		
4 19 PM	7450															
4 20 AM	5,650						18%				16%			66%		
4 21 AM	1,200															
4 21 PM	1250															
4 22 AM	675	3500000	45%				16%				8%			76%		
4 22 PM	550															
4 23 AM	525															
4 23 PM	450													100%		
4 24 PM	700															
4 25 AM	425						1%							99%		
4 25 PM	600															
4 26 AM	450	3200000	41%											100%		
4 26 PM	450															
4 27 AM	425													100%		
4 27 PM	875															
Counts from 3·1 to 3·3 were misplaced																

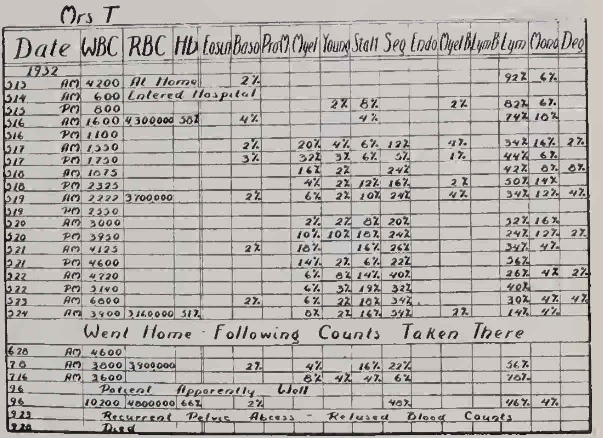
Case 5—Miss P. Blood Counts.

Case 6. PRIMARY CHRONIC RECURRENT TYPE. Referred by Dr. D. Mrs. T., aged 33, married. May 14, 1932.

Family history: Negative.

Past history: Recurrent trench mouth since December, 1929. No blood counts available. May, 1930, severe attack of trench mouth. July, 1930, lymphangitis of arm from insect bite.

Present illness: Soreness of gums and throat started 2 weeks ago. Entered hospital May 14, 1932, and went home May 24, 1932, apparently well. She improved rapidly after use of nucleotide. She was fine until latter part of August when she developed a pelvic inflammation. Her doctor reported a mass felt to the right of the uterus. Temperature varied from 99 to 102 degrees. She was confined to bed for three weeks, but gradually improved and apparently recovered, as shown by the following blood count:



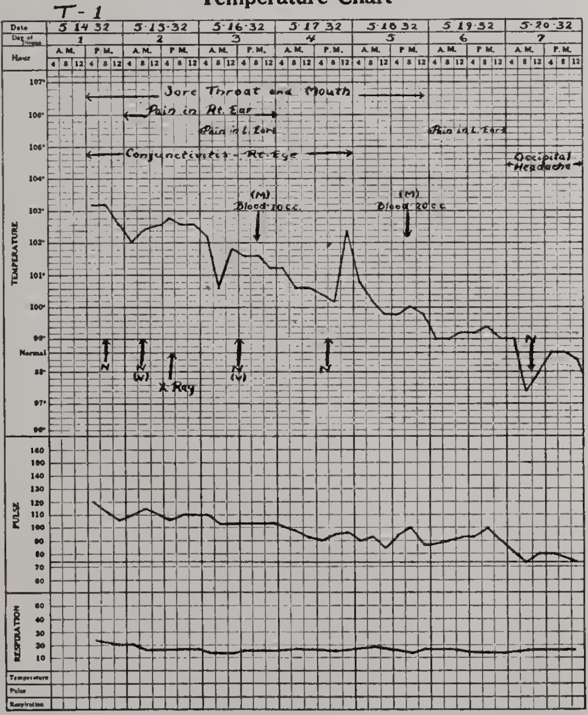
Mrs T

Date	WBC	RBC	Hb	Eosin	Baso	ProM	Myel	Young	Stab	Seg	Endo	MyelBl	LymBl	Lym	Mono	Deg
1932																
5 13 AM	4200	At Home			2%									92%	6%	
5 14 AM	600	Entered Hospital														
5 15 PM	800							2%	8%			2%		82%	6%	
5 16 AM	1600	4300000	58%		4%				4%					74%	10%	
5 16 PM	1100															
5 17 AM	1350				2%		20%	4%	6%	12%		4%		34%	16%	2%
5 17 PM	1750				3%		32%	3%	6%	5%		1%		44%	6%	
5 18 AM	1075						16%	2%		24%				42%	8%	8%
5 18 PM	2325						4%	2%	12%	16%		2%		50%	14%	
5 19 AM	2222	3700000			2%		6%	2%	10%	24%		4%		34%	12%	4%
5 19 PM	2550															
5 20 AM	3000						2%	2%	8%	20%				52%	16%	
5 20 PM	3950						10%	10%	18%	24%				24%	12%	2%
5 21 AM	4125				2%		18%		16%	26%				34%	4%	
5 21 PM	4600						14%	2%	6%	22%				56%		
5 22 AM	4720						6%	8%	14%	40%				26%	4%	2%
5 22 PM	3140						6%	3%	19%	32%				40%		
5 23 AM	6800				2%		6%	2%	18%	34%				30%	4%	4%
5 24 AM	3400	3160000	51%				8%	2%	16%	54%		2%		14%	4%	
Went Home - Following Counts Taken There																
6 28 AM	4600															
7 8 AM	3800	3900000			2%		4%		16%	22%				56%		
7 16 AM	3600						8%	4%	4%	6%				78%		
9 6	Patient Apparently Well															
9 6	10200	4000000	66%		2%					48%				46%	4%	
9 23	Recurrent Pelvic Abcess - Refused Blood Counts															
9 28	Died															

Case 6—Mrs. T. Blood Count.

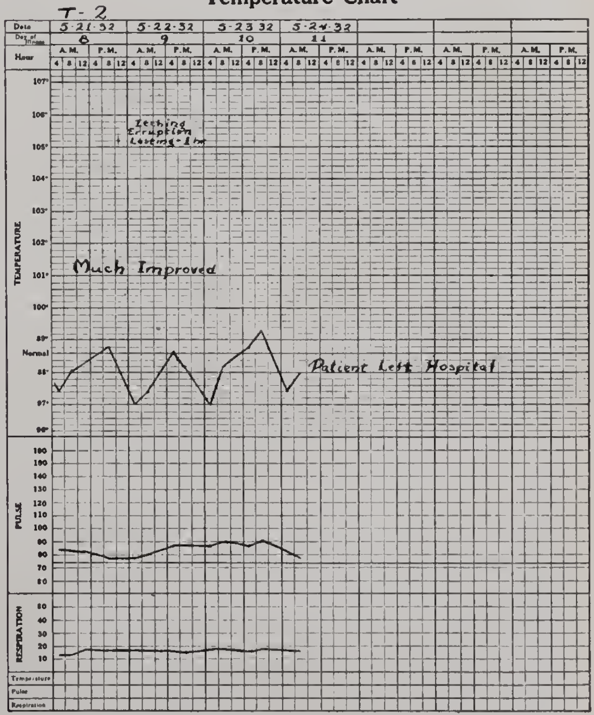
September 6, 1932. R. B. C. 4,800,000. W. B. C.

Temperature Chart



Case 6—Mrs. T.

Temperature Chart



Case 6—Concluded.

10,200. Hgb. 66%. Seg. 48. Lymph. 46. Mono. 4. Bas. 2.

On September 23rd, she became ill with a severe chill and pain in the right lower pelvic region, and was seen by her physician at 1 p. m. Temperature 102. She refused hospital treatment, and also any nucleotide or other form of therapy. She died at 2 a. m., September 28, 1932.

Case 7. PRIMARY CHRONIC RECURRENT TYPE. Referred by Dr. G. (Granulopenic type of woman). Mrs. M., aged 63, married. July 18, 1932.

Family history: Negative.

Past history: Never strong. Exhausted. Nervous. Blood counts often low. Had perirectal abscess September, 1931. Blood counts, 6,200 down to 1,100.

Present illness: Had a bee sting June 20th, 1932. July 1st, 1932, chill, fever, sore mouth. She ran a mild course with various amounts of fever to August 1st, 1932. Gradually improved and recovered.

Blood counts:

July 3, 1932—4,400
July 9, 1932— 700
July 22, 1932—3,200
Oct. 5, 1932—3,900

This patient was given nucleotide intramuscularly and each time developed a chill and fever. Five injections given. No improvement, hence discontinued. She was feeling very well up to December, 1932, when she had an ulcerated tooth extracted. This was soon followed by a chill. Her W. B. C. dropped to 150. Two ampules of nucleotide given, count rose from 150 W. B. C. to 1,200 W. B. C. Her doctor reports she died of a coronary occlusion, December 7th, 1932.

Case 8. SECONDARY, TERMINAL TYPE. Mrs. R., aged 76, widow. February 15, 1930.

Family history: Negative.

Past history: Patient ill for eight weeks with herpes zoster (severe attack), later a cystitis and pyelitis.

Present illness: April 17, 1930, patient developed a sort throat with a membrane. Vincent's organisms found. No diphtheria. Course, 4 days. Died April 21, 1930.

Blood counts:

April 19, 1930—800. No granulocytes.
April 20, 1930—600. No granulocytes.
April 21, 1930—600. No granulocytes.

SURGICAL POSSIBILITIES OF THE DEFORMED ARTHRITIC*

J. E. M. THOMSON, M. D.,
Lincoln, Nebraska.

In the past few years much has been written, and more said, with respect to the more recent scientific thoughts concerning the treatment of chronic arthritis. I am heartily in accord with the very splendid work that is being done, and with the new possibilities for cure that are offered to the sufferer of chronic arthritis. I have had the pleasure of taking a part in this evolution, and during the past three years I have treated some three hundred different cases of chronic arthritis with most gratifying results. However, when waxing enthusiastic over the present possibilities for the chronic arthritic, we must not forget that after every possible care has been given, whether it be by the use of vaccine therapy, physical or mechanical therapy, or metabolic or endocrinic management, or what not, in spite of all these efforts terrible disabilities result, due to deformities, contractures, atrophies, and loss of joint surfaces, as the result of the ravishes of this disease. Nations are awake to the tremendous economic loss to the commonwealth, to the fearful amount of human suffering, of mental anguish, due particularly to the hopeless unproductive future such deformed individuals must face.

Every doctor treating this disease is quite prone to have his major attention directed to the problem of preventing the extension of the process, and the effort to relieve the pain and discomfort to the extent that the patient is allowed to assume a position of greatest comfort during the active period of the disease, with the result that ultimately contractures and deformities of the extremities, with malpositions, dislocations, stiffness and ankyloses of the joints in bad position results, thus condemning the patient, after acute symptoms subside, to years of useless existence in bed or in a wheel-chair. May I plead with you at this juncture, with you who are interested in this subject and the future ultimate well-being of your patients, that you recognize the possibilities offered by a maintenance of these diseased extremities in positions that will give the ultimate optimum amount of function, should the destructive processes of the disease bring about a loss of joint surfaces with stiffness and ankylosis. Such management would greatly simplify the surgical problem for the orthopedic surgeon. Effective traction and splints, carefully administered physiotherapy, guarded active and passive motion, have a very definite relation to ultimate healing and restoration of function in the diseased joints. Further, careful aspiration and treatment, with Pregl's Solution, of chronic swellings of certain of these joints has a definite healing effect. Atrophy and changes of bones and muscles and the circulatory disturbances that take place as a result of this disease, when orthopedically treated under the most ideal circumstances, offer a sufficient problem without having to deal with the vicious deformities so often seen. It is, therefore, essential that there be a very close co-operation between the physician and the orthopedic surgeon all through the course of the disease. Also must the patient, his family and friends, retain an optimistic attitude of confidence and cooperation during the long period of reconstructive process, if marked benefit is to be derived.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

In the consideration of the surgical treatment for the betterment of function, we may immediately divide our patients into two classes. In the first class are those who have had protected splinting, physical and mechanical therapy, during the acute process, and have disabilities due to lack of function or lack of motion in joints that are in the position of optimum function. The second class includes those patients who have contracture deformities, dislocations and malpositions, as the result of not having been kept in the position of optimum function during the acute period of the disease.

William Boyd, the great surgical pathologist, is quoted as saying "That when we come to the subject of chronic non-tuberculis arthritis, we have to sail an uncharted sea, through thick fogs, with few landmarks that are of any value." So it is in the estimation of possibilities offered by surgical intervention in behalf of these arthritic joints. The assurance of restoration of a destroyed joint to economic efficiency is very often problematic. Many well-defined principles have been evolved, but in every case all phases of the problems confronted must be considered, and the value of surgery depends, in general, on the type of infection, the extent of injuries and trauma to the articulation and surrounding tissues, the length of time since the cessation of symptoms, and the age and health of the patient. A thorough knowledge of the history—clinical, physical and x-ray data connected with the case is essential. It is always essential before operative ventures are appropriate to subdue the infection and raise the patient's resistance to the extent that operative intervention can be tolerated, with little possibility of postoperative flare-up of the arthritis. It is very important that one has a very complete understanding of the gross pathological changes of the articulations with respect to the destruction of their integral parts, the alterations in the relative positions of the articulating ends of the bones, the impairment of muscle function acting upon the joints, and the atrophic bone, ligament and circulatory changes that are apparent. It must be born in mind that there is a prolonged postoperative period, during which careful restorative treatment must be maintained to gain function. Further, patients who are in a deteriorated state of health are poor operative risks, as often they are unable and unwilling to cooperate in this post-operative treatment, which often involves the necessity of multiple operations. Poly-arthritis cases, with disabilities of the upper extremities, offer serious hindrance in postoperative treatment of the lower extremity joints, on account of the inability to use crutches, and weight bearing always becomes a complicating factor.

Unless one has a complete acquaintance with the pathological changes that occur in the various types of arthritis under our present classification, and understands completely the direct bearing that such pathology has upon the surgical efforts, extremely disappointing results will follow. The field of activity for each of the types is rather limited and results are not assured, and unless confined to procedures adaptable to the particular type of arthritis that is dealt with, disaster is probable. Briefly, our classification divides arthritis into four distinct types: Rheumatoid, Osteoarthritis. Fibrositis, and the Mixed. One might include with this a fifth group, consisting of independent and often complicating phenomena, with typical etiology. This type includes those arthritides due to metabolic disturbances, trauma, those of nerve origin, specific infection, and so forth. We recognize under the term Rheumatoid Arthritis, those conditions similarly described under the term atrophic arthritis, chronic proliferative arthritis, synovial arthritis and arthritis deformans. It is apparent by the acute onset, prevalence in the younger decades of life, tendency towards chronicity, fusiform swelling of the joints—particularly of the small joints—and boggy swelling of the large joints, and profound tendency to cause deformities. The latter factor, that of the deforming possibilities of this type, often brings these patients to the surgeon for reconstruction that can frequently be rendered in a beneficial manner. The Osteoarthritic group includes chronic degenerative arthritis and hyperatrophic arthritis, and is recognized by its insiduous onset, and often by the lack of symptoms until marked changes are evident in the bony overgrowth about the joint. Ordinarily it affects the larger joints. Its manifestation in the vertebrae as spondylitis causes marked changes in the bodies of the vertebrae, and the appearance of exostosis, or bone projections, of the margins. Heberden's nodes are its manifestation in the small joints of the fingers. This type yields less readily to surgical intervention, although in selected cases, intra-articular as well as extra-articular surgery may greatly aid function. Under the term Fibrositis there are grouped the non-articular disturbances, so-called muscular rheumatism, myalgia, myofascitis, neuritis et cetera. The field of surgical activity here is extremely limited. By the term

Mixed Arthritis is meant the evidence of complicating Rheumatoid. Osteoarthritis and perhaps Fibrositis in the same joints, or appearing simultaneously in different joints of the same patient. This very common type of arthritis is often a surgical problem, and it must be considered from each of its component complicating phenomena.

The changes in the peri-articular structures must receive due consideration, as they exert a direct influence on the production of deformity. The fibrotic, capsular and ligamentous changes about the hip, shoulder, knee and fingers, are of grave importance, but the lengthening of such shortened structures often forms a relatively simple method of restoring function to a stiffened joint. Likewise, atrophic and degenerative changes of the muscles, acting upon the joints, have a very marked influence on the possibilities of surgical intervention. All of these changes must be reckoned with at the operation and during the after treatment. Limitation of motion must be taken into consideration, and it is caused by one or more factors, intra-articular, extra-articular pathology, or both. Among the causes are first, muscle spasm, which as the late Sir Robert Jónes says, "Always precedes contraction deformities." Second and third, as mentioned before, are the fibrotic changes in the capsule and ligaments of the joint, the shortening and atrophy in the muscles and tendons. Fourth, is the alteration in the shape of the articular surfaces, due to the disease of the joint itself or to change in position. Fifth, is ankylosis, or fusion of the articulating surfaces by bone formation. Bone changes are extremely difficult to deal with, for when a normal bone is replaced by soft, atrophic cancellous type, it crushes easily on manipulation, or when the changes from normal are of the osteophytic type, with eburnations and rarefaction with atrophy deeper, manipulation may cause fracture.

Operative intervention should never be considered until all evidence of acute inflammatory trouble in the joints has been allayed for many months, because of the danger of lighting up latent foci in the deformed joint. The patient's general condition should be brought up to a state of highest resistance, as evidenced by the putting on of weight, a markedly improved general appearance, normal blood findings, a state of immunity or desensitization brought about by vaccine therapy.

Operative intervention is indicated for the purpose of correcting deformity that is due directly to the arthritis during its acute stage, or for the correction of a pre-existing deformity that has been aggravated by the arthritis, such as coxa vara, genu valgum, flat feet. Further, it is also indicated, for the removal of intra-articular complicating conditions, as foreign bodies or injured semilunar cartilages, and diseased tissue, synovia, and fat tabs, as well as cartilaginous fringes.

The operative measures at our disposal are of two distinct types, manipulative (bloodless), operative (open operation). The open operation measures may again be devided into extra-articular and intra-articular operations. Manipulative, or bloodless operations, and extra-articular operations should, I believe, always be tried first when dealing with contracture deformities due to arthritis, purely for the correction of position, but they should be carried out with great discretion and with full understanding of the complicating morbid phenomena of nerve stretching and gangrene that are likely to follow an over-enthusiastic forceable manipulation. I shall never forget, early in my practice, the forceable straightening of the contracted knees of a woman suffering from Rheumatoid arthritis by a master surgeon, and the resultant gangrene of the feet and legs, ultimately ending in her demise. Forceable correction of long standing contracture deformities with osteoporosis must be performed with great care, because of crushing and flattening of cartilage and bone surfaces, and possible fracture. Manipulative surgery is not for the inexperienced, and more often does harm than good, when ineffectually used. The one important factor, however, is that if, by manipulation and extra-articular operation, such as tenotomy and capsulotomies et cetera, the contracted limb can be straightened, intra-articular measures can later be more adequately dealt with, as the joint has been restored to as near normal position as is possible. There is a third type of operation that does not deal directly with the joint, but has a very marked influence in a selected group of patients, that is sympathetic ganglionectomy. It is particularly adaptable to young patients with patent elastic vessels, and those in which the pathology is limited to the hands and feet. The selection of such cases has been carefully outlined by Adson, Hench and Brown, as follows:

1. The arthritis should be chiefly periarticular, with little, if any, bony alterations (destruction or hypertrophy), except atrophy.

2. The patients preferably should demonstrate alterations in vasomotor tonus, shown objectively by cold, clammy, sweaty hands and feet and re-

duction of blood pressure, and subjectively by intermittent numbness and tingling.

3. The vasomotor alterations must be capable of correction, indeed of overcorrection, under the influence of release from control of the sympathetic apparatus. The possibility of such correction can be demonstrated by the "vasomotor index": a definite increase in the temperature of the extremities, greater than the increase of the temperature of the mouth after typhoid vaccine has been given intravenously.

4. The patient should be rather young, preferably less than the age of thirty-five and not more than the age of forty or forty-five.

5. The arthritis should be progressive, and the main disability should be confined to the extremities, particularly to the hands and feet.

6. A reasonable period, probably six months, of intensive, not haphazard, treatment by the more established, less radical procedure, should have been allowed. However, rapidity of progression or economic circumstances may necessitate consideration of earlier surgical measures.

Extra-articular operations, useful in the treatment of arthritis, are as follows:

1. Tenotomy.
2. Fasciotomy.
3. Muscle lengthening.
4. Capsulotomy.
5. Osteotomy.

Among the intra-articular operations are:

1. Arthrotomy.
2. Synovectomy.
3. Arthroplasty.
4. Arthrodesis.

Capsulotomy is of great value, as the contracted capsule has a very marked influence on the deformity. It is essential to incise the entire capsule in order to fully relieve contracture about the hip, but severing of the posterior ligaments of Dekner is usually sufficient to relieve most of the flexion deformities when stiffness is due to extra articular arthritic pathology, likewise, casulotomy for stiff fingers proves helpful. Osteotomy is of use to improve the position and function of the lower extremity when arthroplasty is inadvisable. Arthrotomy, or opening the joint, is a most useful procedure for the removal of foreign bodies, diseased or injured semilunar cartilages et cetera, and particularly for the purpose of performing synovectomy of the knee. After the acute symptoms have been relieved and there remains a proliferated villous mass of synovia with chronic swelling of the knee, this operation is quite appropriate. A very complete synovectomy is essential to have an adequate result. and when properly performed in selected cases, leaves a very much better looking joint. The decreased size of the joint, the lessening of pain and discomfort, and the improved function often brought about by this operation contributes greatly to the betterment of the patient. Arthrodesis, or excision, has a very distinct place in bringing about comfort when annoying circumstances and painful motion cannot be relieved, particularly in chronic arthritis of the spine, sacro-iliacs, feet and wrists. It offers a splendid opportunity to stabilize and give better weight-bearing to the afflicted joints. These operations resemble those often performed for the deformities of infantile paralysis. Arthroplasty has a distinct place in restoring function to stiffened or ankylosed elbows, knees, hips and shoulders. This operation demands careful technique, accurate estimation of functional possibilities, to assure adequate results.

Operative technique is beyond the scope of this paper; however, the illustrations of a few of the results obtained are testimonial of the possibilities offered.

DISCUSSION

ROBERT D. SCHROCK, M. D., (Omaha): I should like to recall to you the first portion of Dr. Thomson's conclusion, where he suggested the possibility of prevention of arthritic deformities. This is the stage where the effective treatment, after subsidence of the acute disease, can be very much simplified.

Every arthritic joint is potentially a deforming joint. This is due to muscle spasm; which, if permitted to continue, will result in structural shortening of the muscles and ligaments. If, at the onset of the arthritis, these joints be fixed with traction or splinting in proper postiion, not only will the patients be distinctly more comfortable, but the possibility of later necessary surgery will be definitely diminished.

I should like to emphasize the first part of that conclusion, and suggest that as the paper comes into print, you will find it a very desirable one for purposes of reference and review.

H. WINNETT ORR, M. D., (Lincoln): I want to go just a step further with Dr. Schrock's comments in regard to the prevention of deformity. We are recognizing more and more that the prevention of deformities in arthritis, just as in fractures, lies largely in the hands of the general practitioner by whom these patients are seen first. A good deal of trouble resulting in deformity has been caused by the fact that the teaching, with regard to the early use of splints in arthritis, in our medical schools and text books has been bad in this respect.

Patients are warned against the putting on of splints, because of danger of getting stiff joints. The splints and casts, if properly applied early enough, do not contribute to stiffness. As has been pointed out, structural and microscopic changes take place in joints by reason of infection or inflammation only, and not by reason of their being in one position or another.

A great deal of stiffness sometmies takes place because splints have not been put on properly. A splint or cast should be put on so the patient does not have muscle spasm and pain. If it does not afford relief, it is improperly applied. If casts or splints do not contribute to the patient's comfort, then they should be reapplied properly. If you put on casts or splints in correct position, with muscle spasm relieved and deformities prevented, you have rendered a real service, and you have saved many patients from subsequent surgical procedures.

J. P. LORD, M. D., (Omaha): I have been very much interested in this discussion. This is the kind of work with which we deal constantly. I am in hearty agreement with practically everything that has been said. I think you have been favored by having received good first principles, and I think you can abide by them.

About three-fourths of our work is from outside of Omaha. Therefore, we have occasion to analyze these cases and ask ourselves why so many cases finally wind up with the specialist. I think one of the reasons is because some of the fundamental first principles are not too well understood by the general practitioner. I refer more particularly to the matter of braces.

I recently had two cases from country districts where persons of considerable age were having difficulty in using the lower extremities because of a partial ankylosis and enough arthritis to subject them to recurrence of their trouble, so that they were disabled and unable to get about. It seems this is one of the reasons these cases get away. They are old stories. They have been going on for a long time. On account of the economic condition of most of these patients, they stay away from the doctor because they owe him already. Perhaps some have tried other things without success. A few have gotten out of touch with all help. Finally they think they will go to town and see the doctor there.

These cases of partial ankylosis with an arthritis are problems, particularly if the limb is deformed. Nobody has worked with the idea of giving those patients relief, and these cases I mention were not so bad but they could be relieved with a brace holding the limb, removing the excessive strain, and sending them off comfortable, with the irritation eliminated and function improved. They can get along without the brace part of the time.

It had not been taken into account if we can remove the chief cause of recurrence of trouble, we may give these patients a degree of comfort that becomes of very great advantage to them. They are very grateful. I think the ordinary relief we can give, by relieving excessive strain to a damaged joint, is neglected too often. The doctor apparently has not had these ideas in mind so that he could apply them and retain his patients at home and treat them with his own hands.

DR. THOMSON, (closing): I want to thank all the discussants for their kind remarks.

I am impressed always by one thing: The fear so many men have of protecting these limbs from contraction lest they will have stiffness develop by such procedure. At least you need not be afraid to apply traction. That is the minimum amount of protection you can give, and this is of great importance in preventing muscle spasm and strain.

I think one reason why we have been led to this fear is the fact that in the past we have been too prone to keep these patients in casts, and for too long a period, with resultant atrophic changes. I believe so thoroughly in the usefulness of casts and immobilizing splints that I would not depreciate their value for anything; but they must be used with the same care and discretion you use any other therapeutic armamentarium. It is just as important to apply active and passive motion, as soon as joint pain has been relieved sufficiently, as to apply heat and massage. This can be done by dividing your cast and removing the limb for such treatments. Don't forget the use of traction and the possibility of splints in bringing this limb ultimately to a position of optimum function, and leaving the orthopedic surgeon with the simpler problem of refunctioning his joints, should they become stiff.

SPONTANEOUS RUPTURE OF THE UTERUS*

F. J. MURRAY, M. D.,
Omaha, Nebraska.

Spontaneous rupture of the uterus has been called an abdominal catastrophe. The subject as treated here will deal only with those accidents occurring previous to labor although there are many points in common with those occurring before and after the onset of labor.

All writers agree that the condition is extremely rare but none the less important from the standpoint of prevention, diagnosis and treatment.

Our excuse in presenting the subject is to give a brief historical outline, to remind you of the salient factors as, etiology, symptomatology, diagnosis, treatment and pathology, and to finally recite two cases which have come under our care.

HISTORICAL OUTLINE

By spontaneous rupture of the uterus is meant the sudden rupture of the uterus previous to labor and due to intrinsic disease of the uterus rather than external trauma.

Mercier(1) wrote a thesis on the subject in 1898. He reported 28 cases with 23 deaths. The earliest case in this series was in 1780.

By 1903 Baisch(2) was able to collect 79 cases including one of his own.

In 1904 De Lee(3) reviewed the literature and added a personal case. This author gives an excellent discussion of the subject in his textbook(4).

The subject matter was again reviewed in 1920 by Kane(5) with one personal case and he estimates 25 cases occurred from the time of Baisch's report up to 1920.

Riddell(6) in 1926 gave a very comprehensive article and review with one case report.

In the more recent literature there is 1 case reported in 1929, 6 in 1930, 6 in 1931 and 12 in 1932.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

ETIOLOGY

Most authors believe that previous injury to the uterine wall by the curet, and scar formation from caesarean section are the principal causes of this accident of pregnancy.

De Lee(7) mentions the following possible etiological factors:

a. Through a scar as from caesarean section.
b. Previous rupture.
c. Injury (as external trauma).
d. Gynecologic operation, as the enucleation of a fibroid.
e. Curettage.
f. Thinning of the uterine wall from manual removal of the placenta.
g. Hypoplastic uteri.
h. Malformed bicornate uteri.
i. Interstitial pregnancy.
j. Actual disease of the wall.
k. Carcinoma.
l. Hydatiform mole.
m. Fatty and hyaline degeneration of the uterine muscle.
n. Infection of the uterine wall.
o. Growth of the placental villi into, or through, the wall of the uterus.
p. Abruptio-placentae uterus i.e., rupture of the uterine wall by a hematoma forming between the placenta and the uterine wall.
q. Displaced or adherent uteri.

As a matter of fact, relatively few of the cases listed actually came from the rupture of a caesarean scar.

In our own experience, the growth of the placental villi into, or through, the wall of the uterus was the cause in one case and displaced or adherent uteri was the cause in the other.

Rupture occurred immediately after coitus in 3 cases, including one of our own.

Multiparity is a constant predisposing cause. Kane(8) thinks this is due to intra-uterine manipulations in the course of former labors, plus infection.

Lues is mentioned but Riddell did not think that it was significant in his case, in as much as the blood Wasserman was negative at the time of rupture.

SYMPTOMATOLOGY

The history is usually that of a sudden, violent. pain in the lower abdomen followed by profound collapse, or McPherson's(9) case gave a rather typical history of "a suddent sharp pain in the lower abdomen and fainted."

In some of the reported cases the fetus acted as a wedge and there was no internal hemorrhage, as in McPherson's case(10) and in our 2nd case.

There may. or may not, be bleeding from the vagina.

DIAGNOSIS

Diagnosis is seldom made before laparotomy and that of ruptured ectopic pregnancy is the one most frequently made.

Kane(11) diagnosed his case as appendicular abscess but remarked that "it seemed in retrospect to have presented a fairly clear picture of the condition."

The site of the rupture is tender and since rupture usually takes place through the fundus, it is usually central rather than lateral. Bimanual examination usually shows a recession of the presenting part in the later cases. The contour of the fundus is changed as is also the uterine consistency. Labor pains frequently occur if the fetus is not expelled into the peritoneal cavity. If the internal hemorrhage continues, there is extreme pallor, weakness, air-hunger and varying degrees of consciousness. or as Riddell (12) aptly states, "the patients present a picture of dying women."

PROGNOSIS

The prognosis depends entirely upon the recognition of the severity of the condition and immediate laparotomy, although some early authors have suggested uterine pack per vaginum. This is mentioned only to be condemned because of the extremely high mortality rate, and it is quite evident that the hemorrhage cannot be safely controlled in that way.

The mortality rate has been given from 16% to 82%. The smaller rate is more recent and is probably due to improved surgical technique and bed-side management.

TREATMENT

1. Support of the circulatory system, best by
    a. Transfusion.
    b. Infusion of some other suitable solution.

2. Treatment of shock—morphine.

3. Abdominal compression—this I think is very important during the emergency for if the intra-abdominal pressure is greater than the systolic blood pressure, bleeding will be controlled.

4. Elevation of the foot of the bed.

5. Laparotomy and hysterectomy, but repair of the laceration may be permissible in primigravidae.

6. Auto-transfusion, i. e., utilization of the blood in the peritoneal cavity.

PATHOLOGY

There is usually fibrosis of the uterine wall at the site of some previous injury, thinning of the uterine wall or weakness of the wall from interstitial pregnancy. There may be invasion of the uterine wall by placental infiltration of the chorionic villi and hyaline degeneration at the site of the scar is frequently mentioned. The rupture usually occurs in the fundus at the site of placental implantation.

Kane(13) describes the myometrium as friable and often showing round-celled infiltration.

SUMMARY

Spontaneous rupture of the uterus occurs most frequently in multiparae, and intra-uterine manipulations with scarring of the myometrium is almost always found.

Spontaneous rupture takes place through the fundus, while rupture during labor usually occurs in the lower uterine segment.

External force (trauma) may be, and often is, a contributing factor.

Diagnosis: Acute abdomen with internal hemorrhage resembling ruptured ectopic pregnancy, except, the pain is more severe and the shock is more profound.

Treatment: Laparotomy—hysterectomy—possibly repair of the uterine body. Supportive measures—pre-operative and post-operative.

Prognosis—for Mother—approximately 50%; for fetus or baby—100% fatal.

The subject is interesting, not on account of the number of cases we may see, but in the effort we make to prevent this accident of pregnancy, by preserving the integrity of the myometrium.

Case Report: Mrs. W. F. S., age 26 years. Para 2.

First Confinement: Attended by writer—labor normal except a second degree laceration of perineum which was repaired.

Present History: Last menstruation—August 23, 1929. First seen October 9, 1929, at which time a diagnosis of pregnancy was made.

Clinical and Laboratory Findings: Essentially negative. October 18, 1929, called to her home on account of pain in the left flank which was referred down the course of the left ureter. Catherized specimen of the urine showed many pus cells and motile bacteria.

Tentative Diagnosis: Left sided pyelitis. Patient was approximately 2½ months pregnant at this time.

On November 9th, (7th week), husband called about 2 a. m. stating that his wife had had a very severe pain in the lower abdomen following which she fainted. Examination showed extreme pallor, dyspnoea, air-hunger, thready pulse, which could not be counted at the wrist and scarcely by auscultation. She complained frequently of a sensation of "floating away." There was tenderness across the lower abdomen, particularly in the suprapubic area and to the left. There was no vaginal hemorrhage.

Tentative Diagnosis: Ruptured ectopic pregnancy, left side.

Management: A tight abdominal binder was applied. Caffein and sodium benzoate gr. 7½ was given intravenously and a pint of black coffee given per rectum, and morphine gr. 3/8 per hypo.

The foot of the bed was elevated and she was moved to the Immanuel hospital in this position. She showed improvement in the character of her pulse and the dyspnoea improved. Pulse was recorded as being 180-190. Temperature 103. There was a marked leukocytosis, 43,800. After giving 2000 cc of additional fluid subcutaneously and intravenously, a low midline incision under local and nitrous oxide gas anesthesia was made. There was a large amount of clotted and free blood in the abdominal cavity with a pulsating hemorrhage from a rent about 3 cm long in the left fundus. Both broad ligaments were clamped and a sub-total hysterectomy was performed with the kind assistance of Dr. J. R. Nilson. A transfusion of a pint of citrated blood was given and an additional 500 cc of 10% Glucose solution was infused. In 24 hours the temperature was 100, pulse 110-120 and of good quality. The convalescence was uneventful except elevation of temperature on the 8th, 9th and 10th days, probably due to foreign protein reaction. The patient was dismissed from the hospital on the 14th day.

Post-operative Diagnosis: Spontaneous rupture of a 2 months pregnant uterus.

I should add that operation did not take place until about 7 hours after the initial pain. In the presence of intra-abdominal hemorrhage, which is quite apparent, I realize that delay in operation is subject to a certain amount of criticism—and probably justly so. However, I am certain that any operative procedure in this case, without making up some of the volume of lost blood would have been futile.

Pathologic Report by Dr. H. E. Eggers

Microscopic: Sections through the attenuated portion of the uterine wall showed only a very thin lamina, not over 2 or 3 mm. of uterine muscle and this considerably degenerated. Infiltrating and replacing the rest of the wall was placental tissue. In its outer portions this did not show any definite structural arrangements; deeper it contained typical villi.

Diagnosis: Obviously a case of excessive placental infiltration; whether or not to call it a case of chorioepithelioma depends on definition of that term: in respect to its apparently unlimited infiltrative powers; it would, of course, be classified as such a tumor; it remains to be seen whether the presence of metastases will complete the picture. In my opinion, they will not occur.

Note: No evidence of metastases on May 2, 1933.

Case Report: Mrs. B. Housewife, age 34 years. Para 3.

First came under our care June 22, 1932—approximately 2 months pregnant. She complained of intense backache, nausea and vomiting, and experienced a marked discomfort from constipation and pain on defecation. The uterus was completely retroflexed and probably incarcerated. No relief was obtained from exercises, as knee-chest position. The pain and obstipation became more severe.

At 2½ months, I gently lifted the uterus into the forward position, under general anesthesia, after several failures without anesthesia. Except for some local soreness, she was completely relieved and progressed without event until about 4½ months. About this time she complained of "an unusual commotion" in her abdomen. In the next 2 weeks she complained of cessation of fetal movement and the fetal heart sounds could not be elicited.

On October 23rd, she called me about 3 a. m. on account of sharp pain in the lower abdomen. Her description did not seem to warrant seeing her at that time. At 8 a. m. she complained the pain had shifted to the right lower quadrant and she was somewhat nauseated. There was a slight elevation of temperature and pulse. Respiration normal. There was slight local rigidity at McBurney's point. W.B.C. 8,500. She was sent to the hospital with a count of 13,200 at 10:30 a. m. and at 4 p. m. the count was 14,400. The tenderness and rigidity became very marked and a mass could be palpated in the lower right quadrant. A tentative diagnosis of acute appendicitis was made and a laparotomy advised.

Operation—5 p. m. at which time rectal temperature was 102.2, pulse 90 and respiration 20.

Under general anesthesia a right mid-rectus incision was made. "The mass" proved to be a gangrenous knee of the fetus—the extremities and body of which had ruptured through the right side of the posterior wall of the uterus. There was no blood in the peritoneal cavity. One ampule of obstetrical pituitrin was injected into the uterine body, and one subcutaneously. The shoulders and head were extracted and the placenta was removed manually, following which there was profuse hemorrhage. The laceration was repaired.

Much to our surprise, the appendix showed acute inflammation as shown by the pathological report.

Pathological Report by Dr. H. E. Eggers: The appendix had its lumen obliterated by a central mass of connective tissue and fat, in which was a focus of fibrino-purulent infiltration. Its outer wall was infiltrated and covered by fibrino-purulent exudate. A second section could not be identified. It showed acute inflamatory changes.

Diagnosis: Chronic obliterative and acute appendicitis.

The post-operative progress was unusually calm and she left the hospital on the 12th day.

Follow-up: Further pregnancies were strongly advised against, but on May 2, 1933, she appeared at the office at which time she had missed the period on April 15th. A check-up made May 16, 1933, showed a soft patulous cervix, enlargement of the uterus consistent with a 2 months pregnancy and in the normal position. Blood-pressure and urinary findings normal. I shall appreciate very much a frank discussion of the management of the case from now on.

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DISCUSSION

CHARLES F. MOON, M. D., (Omaha): They say you should first say it is a very nice paper, and I will have to subscribe to that. It covered all points so completely it does not leave much for discussion. Dr. Murray's method of showing slides with the high points adds to its interest and to its clarity.

There are a few points we might discuss. The first point I have jotted is the cause of conditions of that sort, and our idea as to our ability to prevent such conditions by our manner of handling cases in which we are compelled to use curettage or finger or any instrument intra-uterine. I think many cases of low-grade hydatidiform mole, where we have actual invasion of the uterine muscle with the villi dipping deep into the muscle itself, are actually missed unless we have a section of the placenta afterwards, or examine it very carefully.

In subsequent pregnancy we have an area of less resistance—a defect in the uterine wall itself.

Both cases Dr. Murray described put me in mind of a case I saw at the Sellheim clinic. It had a clear history of an upset about the seventh week. She went through pregnancy and came to laparotomy at about term at which time a fetus floating among the intestine was found, which was almost the size of a full-term fetus.

I believe a great many of these cases are missed. Bleeding is stopped, and in all probability you have complete digestion of the fetus and placenta. If we do not have infection of these masses they can be completely taken care of by the peritoneum itself.

Another point I think should be stressed is that the number of cases reported is only a portion of those that take place. Many men have recognized cases of this sort and operated without report; so that our clinical figures do not give us the total number of cases that actually happen.

I want to thank Dr. Murray for his presentation, and thank you for the opportunity to discuss the paper.

H. S. ECKLUND, M. D., (Omaha): It might be well to state that one of the two cases reported by Dr. Murray happened to enter the hospital on my service.

In the general routine examination of this patient, there were symptoms such as local rigidity, marked tenderness along with elevation of temperature. There was some increase in white count and also a history which clearly simulated an appendicitis. However, we were somewhat unable to explain the dev. of such a distinct mass at McBurney's point after such a short period of the process.

It occurred to me also that pregnancy complicated by appendicitis is rather an infrequent condition, as is stated in some of the literature. However, Williams in his book on "Obstetrics", states that appendicitis probably occurs as frequently during pregnancy as at other times, but until recently it was overlooked.

Up until 1908 Renvall recorded 25 cases and collected only 253 from the literature.

Williams also states that pregnancy does not predispose to its occurrance, but in cases of chronic disease, in which the appendix has become adherent to the appendages or uterus exacerbation may result from traction exerted by the enlarging organ. Moreover, when the process has eventuated in abscess formation, the rapid decrease in the size of the uterus following delivery may readily bring about rupture of the abscess walls.

Symptoms of appendicitis do not differ from those observed in non-pregnant women, but the condition is frequently not recognized, as the pains are often considered as being due to the pregnancy itself, while the distention of the abdominal walls by the enlarged uterus makes difficult the appreciation of the rigidity and muscle spasm, which are usually valuable diagnostic signs.

So in this particular case there were certainly all the valuable diagnostic signs present to decide on a pre-opr. diagnosis of acute appendicitis.

Dr. Murray stated the character of the appendix, it having a marked amount of fibrino purulent exudate covering its outer surface.

Having observed the gross pathology present in the abdomen at the time of the operation, I noticed that the uterus had ruptured at a point on its right side posterior, closely in approximation with the appendix. Also, I observed the marked amount of fibrinous adhesions between the uterus and the intestines near the point of rupture. Therefore, hysterectomy was absolutely out of the question, necessitating only an evacuation of the uterine contents and repair of that organ.

Therefore, may we conclude that in this particular case the entire process was probably the result of an acute exacerbation of a chronic appendix with development of local peritonitis, extension of infection and inflammation of the uterine wall resulting in a weakened wall, which accounted for a rupture of the uterus in that location.

AVERTIN ANESTHESIA IN ELECTRO-SURGERY*

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Avertin is the trade name for tribromethanol first introduced in 1923 by Dinsberg and Willstoetter. Avertin is a white crystalline substance but is sold as "Avertin fluid" which is a solution of 1 gm of avertin dissolved in 0.5 gm of Amylene hydrate. In 1925 Butzingeiger presented this anesthetic before the Berlin Surgical Society but its true anesthetic qualities were not demonstrated until 1927 by Eichholtz. Since then more than 250,000 cases have been reported in the literature of Germany, England and the United States.

In reality avertin is a basal anesthetic and when used as such is ideal. In major operations or in those requiring a long time it can be supplemented by a small amount of one of the inhalation anesthetics.

Care must be used in preparing the solution for administration. The patients weight should be used as a basis of estimating the amount of the avertin fluid needed. Tables arranged according to body weight are furnished by the distributors from which the amount needed for each patient can be computed. The dosage ranges from 60 to 100 milligrams per kilo (2.2 lbs.) of body weight. In our own use we have adopted 80 mg. per kilo as the usual dose using a little less in debilitated patients.

After deciding the total amount of the avertin fluid needed for the particular patient at hand sufficient distilled water to make a 2.5 per cent solution is measured out into a Florence or Erlenmeyer flask of 500 or 1000 cc capacity. The water is carefully heated to a temperature of 104° F. While the water is at this temperature the desired amount of avertin fluid is drawn into a 10 cc Luer syringe and then added to the water. The flask is then stoppered and shaken vigorously until all globules of avertin fluid have disappeared. The flask is then placed in a water bath of 104° F. temperature and taken to the patient's bedside. Just before injection 2 to 5 cc of the 2.5 per cent avertin solution is placed in a test tube and one or two drops of 1:1000 aqueous Congo-red solution is added. If a pure orange-red color develops the solution is ready for use. If the color becomes blue or violet the solution has decomposed and should be discarded.

The patient should have had a hypodermic injection of morphine sulphate gr. 1/8 and atropine sulphate gr. 1/150 half an hour previously. The avertin solution is now injected into the rectum slowly through a large size male catheter, taking ten minutes to complete the injection. The patient talking pleasantly at the beginning of the injection soon closes his eyes and falls into a sound sleep. Half an hour after the injection the operation can be commenced, the patient having been transported to the operating room in the meantime. The anesthesia is deep enough for ordinary operative work for one and one-half to two hours. If insufficient relaxation is had or if the patient is disturbed by pain a small amount of ether or nitrous oxide may be given.

Avertin anesthesia in 100 mg. doses per kilo lowers the blood pressure 20-30 mm mercury and increases the respiratory rate about ten per minute. In the smaller doses the blood pressure is lowered very slightly and the respirations remain normal. The patient has the general appearance of being in a sound sleep with normal color of skin and mucous membranes. There is no memory of having been away from the bed, the patient frequently asking, three or four hours after the operation, when the operation is to be done.

The patient is entirely relieved of nervous anxiety regarding the approaching operation and awakens naturally without nausea or vomiting and with little post-operative pain.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

Shipley and Karns⁽¹⁾ report the use of avertin anesthesia in 280 cases, 10 of which were prostatic cases, all of which had a lessened phenolsulphonephthalein output and some of which had a high non-protein nitrogen retention in the blood. In none was there any clinical evidence of further impairment of kidney function or increased nonprotein nitrogen in the blood. Thirty-six proctoscopic examinations were made the day after giving avertin and no evidence of irritation of the mucosa was seen. These authors state that: "Avertin is very serviceable in operations on the mouth, face and neck, because the anesthetist is out of the operative field. This is especially true in the use of the cautery in the treatment of cancer, as it obviates anxiety as to explosion."

Goldschmidt and Hunt⁽²⁾ report 225 patients operated in the Surgical Department of Yale University School of Medicine ranging from 2 to 73 years of age with no serious complications. This list covered operations on the brain, spine, neck, chest, abdomen and pelvis. There were a few complaints of intestinal gas and none of intestinal irritation. "None of the 225 patients had any recollection of the events following the rectal instillation."

H. J. Stander⁽³⁾ states that "In women the administration of tribromethanol in a dosage amounting to 100 mg. per kilo of body weight produces no change in the non-protein nitrogen, urea nitrogen, uric acid, lactic acid, creatinin, chlorides, and CO_2 combining power of the blood, and only a very slight increase in blood sugar."

Dandy⁽⁴⁾ reports 250 major cranial operations done under avertin anesthesia at Johns Hopkins Hospital with no bad results from the anesthetic. In fact he claims the operative time is greatly shortened, and the size of the osteoplastic flap is reduced considerably due to the fact that avertin does not produce swelling of the brain. The danger of extradural hemorrhage is lessened due to the smaller incision and operative speed is enhanced by the smooth regular breathing of the patient and the absence of the anesthetist in the operative field.

The dangers of avertin anesthesia reported in the earlier literature are now considered due to over dosage. When avertin has once been injected it is absorbed so quickly it cannot be removed. Cochran⁽⁵⁾ and Dandy⁽⁴⁾ state—"there can be no doubt that their mortality rate has been due to over dosage." Dandy prefers 90-95 mg per kilo and never exceeds 100 mg per kilo in any case. For ill nourished individuals 50-60 mg per kilo is used. Cochran states that as an anesthetic in obstetrics he has found 60 mg of avertin per kilo the most satisfactory dosage.

One of the chief advantages of avertin anesthesia in electrosurgery is the absence of fire hazard. One is free to work about the face, neck or in the mouth with no anxiety whatever about an explosion.

Not only is the lack of fire hazard a great advantage but the fact that there is no mask over the face makes it possible to work rapidly and constantly, thus saving from one-fourth to one-half the operating time in the removal of cancers of the mouth, face and neck.

The dread of the operation is completely obliterated by avertin and the patient has no memory whatever of having been operated upon. The patient usually awakens enough in six to eight hours to take liquid nourishment since there is no nausea or vomiting from this anesthetic.

Patients who have had other forms of anesthesia previous to the use of avertin state that in the future they will take nothing but avertin.

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DISCUSSION

I. C. MUNGER, M. D., (Lincoln): About a year ago Dr. Whitham and myself reported fifty cases of avertin anesthesia from the surgical services of the Lincoln General Hospital and Bryan Memorial Hospital. Our results were similar to those reported by Dr. Tyler. We found in 80 mg. doses, it was necessary to give some extra anesthesia, either local or inhalation anesthetic.

In a number of our cases we were obliged to give ephedrine to control the drop in blood perssure. To those surgeons who had not used it before, the drop in blood pressure was alarming. We found the anesthetic particularly useful in children in doing away with the fear they have of undergoing a general anesthetic.

Our patients, too, have preferred it to other forms of anesthesia.

In cases of inadequate anesthesia, additional avertin can be given, either to prolong the period of anesthesia or to deepen it, if the catheter is clamped off and not removed from the rectum after the initial instillation.

Our principal objections to avertin have been the technique necessary to prepare and give the anesthetic, and the considerable drop in blood pressure seen in the occasional case.

THE PATHOLOGICAL CERVIX*

(From the Department of Gynecology, John A. Creighton Medical College.)
MAURICE E. GRIER, M. D.,
Omaha, Nebraska. -

Cervical infection is probably the most common pelvic lesion in the female. Fulkerson⁽¹⁾ in a study of 6,483 gynecological patients found chronic cervicitis present in 33%. Seventy-eight per cent of the cases occurred between the ages of twenty and forty and 92 per cent were married. In the married group 80 per cent had born children or had miscarried. He found the gonococcus in only five cases. From this he concluded that trauma of labor or abortion is the chief factor in producing the condition and that gonococcal infection is not as frequently the cause as is commonly supposed.

Kerwin⁽²⁾ in a study of one hundred cases postpartum found erosion present in twenty per cent. This percentage usually runs much higher in other series. Certainly postpartum examination at about the sixth week reveals many women with small erosions as yet unhealed.

Moench⁽³⁾ has described the embryological formation of the cervical canal as being lined first with columnar epithelium which is displaced during early intrauterine life by squamous epithelium pushing for a distance into the canal itself; and that it can be found there as late as the sixth month of fetal life but is nearly always pushed out again by the columnar epithelium which normally lines the canal. An exaggeration of this last process is the probable cause of the so-called congenital erosion which is nearly always symmetrical in outline. The columnar epithelium retains its gland forming properties even in this new area. The result is the formation of mucus secreting glands invading the underlying structure of the portio vaginalis. Eversion or erosion exposes a gland-bearing surface which with its columinar epithelium is totally unsuited to withstand the repeated traumatism of the vaginal secretions, vaginal douche solutions and coitus. Infection is inevitable. The glands become invaded by bacteria which penetrate to their depths extending deeply between the muscle fibres of the cervix. The ducts become swollen and occluded and the gland itself is distended with a thick, ropy, muco-purulent material which is forced out into the canal appearing at the introitus in more or less abundant quantities.

This troublesome symptom is by no means of chief importance. There is a definitely palpable parametrial infiltration which also involves the uterosacral ligaments, which combined with the tugging of the heavy cervix can well account for the persistent backache which is so prominently a symptom in this condition.

Sturmdorf⁽⁴⁾ is of the opinion that the cervix cannot be entirely disregarded as a primary focus and this view is supported by Moench⁽⁵⁾ who, in animal experimentation, produced evidence tending to show the affinity of cervical streptococci for joint tissues. While this view is not generally accepted there is no question but that the general health of the patient improves on treatment of the local condition. The presence of streptococci in the cervix undoubtedly accounts for the cases of puerperal sepsis in which there is no evidence of contamination from external sources. Unquestionably the bulk of tubal exacerbations are due to re-extension upward from a latent gonococcal cervicitis.

While sterility, especially the so-called one-child sterility, may be the result of tubal occlusion it is more often due to the interference of the thick cervical muco-pus to the upward progress of the spermatozoa. This can be demonstrated by utilizing the post-coital method of Huhner, showing the difficulty encountered by a spermatozoon in its progress across a field of cervical muco-pus.

Undoubtedly the most serious sequela of neglected cervical trauma is cancer of the cervix. According to Polak⁽⁶⁾ cancer of the uterus constitutes about one third of all malignancies in the female and about ninety per cent of these orignate in the cervix. Ninety-five per cent of women with cervical cancer will give a history of trauma with infection. These percentages are borne out in the writings of most authors and all emphasize the importance of cervical trauma and subsequent infection in their relation to the development of cancer. Spontaneous repair occurs to a certain degree in all erosions by the advancement of the squamous epithelium, which fills the misplaced cervical glands forming plugs of pavement epithelium extending into the subepithelial spaces. The constant relightening of the endocervicitis with the formation of a new erosion and subsequent healing, thereby keeping the two types of epithelium in a constant turmoil is a greater factor in malignant change than mere mechanical irritation and we offer in support of this the infrequency of carcinoma in complete procidentia, there being only one malignancy in 683 cases of third degree prolapse in Pemberton's(7) series.

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Certainly any condition with such immediate and later possibilities warrants careful consideration as to methods of treatment. Occurring as it does during the child-bearing period the treatment must be such as to interfere in no way with the normal function of the uterus. For many years amputation was performed but low amputation removes only a portion of the pathology and high amputation tends to produce early abortion due to interference with the lower uterine segment. It most certainly produces dystocia at term, the cicatricial ring preventing proper dilatation and retraction of the cervix. For those cases with laceration, trachelorrhaphy when done should be performed soon after the initial laceration for when delayed until the cervix has become thoroughly infected this operation will not eradicate the intracervical inflammation. Immediate repair of gross cervical tears will reduce to a minimum the number of operable lacerations found at the sixth week post-partum.

The enucleation of the endocervix according to the technique of Sturmdorf(8) is the most satisfactory way of dealing with the extensively involved cervix from a surgical standpoint as it removes the bulk of the diseased tissues and interferes little with the musculature of the cervix. Two factors leading to poor post-operative results are contamination of the operative field and operating on an actively infected cervix.

Hunner(9) was the first to advocate the use of the actual cautery using the Paquelin type and Dickenson(10) in 1921 simplified the procedure by making use of the electric nasal cautery, which has since then come into fairly general use. Cashman(11) in a series of cases cauterized the cervix and then immediately amputated it so as to secure the specimen for histological study. Microscopical sections of these specimens show the effect of the heat at some distance from the charred area, evidenced by the destruction of the epithelium but preservation of the gland outlines. This explains the beneficial effect of the treatment since if only those glands were affected that came in direct contact with the cautery knife it would be necessary to completely sear the entire canal to produce the desired results which has not proven so clinically. Two methods of cauterization are at the present time being used; the first for those cases of cervicitis with no laceration or eversion, in which the incisions are made four in number, arranged as the spokes of a wheel about the external os. The cold cautery tip should be carried up into the canal to the internal os and the tip then heated cauterizing to a depth of about one-eighth of an inch; the second method is used in those cases with moderate laceration and eversion, the incisions here being made more or less parallel to each other and about one-fourth inch apart extending down over the everted anterior and posterior lip. These incisions tend to correct the eversion as the fine scars caused by the cauterization heal and contract. Certain cases have a pin-hole os associated with a distention of the canal by a large quantity of thick mucus. Here dilatation of the external os is necessary first for the removal of the mucus and second to secure a larger opening through which to manipulate the cautery wire without causing a circular burn of the external os. Practically all cases requiring subsequent dilatation are those in which a circular burn of the external os has occurred. For this reason the nasal type cautery has proven of greater advantage due to the ease of manipulation. The most common immediate complication following the use of the cautery is pelvic cellulitis which is due to the reactivation of a subacute infection in the cervix. For this reason cases selected for this treatment should be those which have definitely passed over into the chronic stage. Adnexal masses, if they be chronic, are not of necessity a contraindication to this form of treatment; on the contrary chronic adnexal masses quite frequently disappear after the cautery treatment. Cases with marked or moderate parametrial infiltration should be treated prior to cauterization; treatment consists of application of mercurochrome to the endocervix, vaginal tamponade and hot saline douches extending over a period of two to three weeks. Pelvic examination will then usually show the absence of or a great diminution in the amount of the infiltration and cautery may then be used without the danger of a subsequent cellulitis and the necessity of placing the patient in bed after an office procedure. Other cases with great swelling of the cervix are treated with the suction apparatus and with diathermy, using the Chapman electrode. The cervix rapidly decreases in size and the discharge becomes less purulent at which time one may proceed with the cauterization with a greater chance of beneficial results. A fair percentage of postpartum cervices at six weeks show small areas of erosion where no gross tear was demonstrable at the termination of labor. One treatment with the cautery usually suffices to secure healing. Postnatal cases where there is evidence of mixed infection are given a daily douche containing one-half of one per cent of lactic acid which seems to return the flora of the upper vagina to a more normal condition quicker than any other solution. All suspicious areas are subjected to biopsy. When necessary this can be done as an office procedure with the aid of a tissue punch. Since the cervix is insensible to all stimulation except dilation it is rarely necessary to resort to anesthesia to secure this specimen. By this method many biopsies may be performed which would otherwise be postponed. The application of Lugol's solution as described by Schiller is an excellent diagnostic aid in outlining suspicious areas on the cervix.

The post-operative treatment following the cautery is very simple, the patient taking daily saline or sodium bicarbonate douches to clear away the irritating discharges exuding from the cauterized area; she returns to the office every third or fourth day at which time the cervix is painted with a two per cent mercurochrome solution and a tampon is inserted which has been dipped in a mixture of zinc oxide and glycerine, one part to eight. The zinc oxide mixture tends to keep the vaginal vault dry and thereby reduce the possibility of irritation in that area. Hemorrhage may occur in an exceptional case but when it does there is rarely more bleeding than the patient has at her period. It may occur immediately after the treatment due to having the cautery blade too hot and causing it to act as a knife rather than an instrument for the dissemination of heat. The latter is the effect most desired since the beneficial result of the treatment is chiefly due to the heat that is placed in the tissues adjacent to the cauterized line. The hemorrhage may also occur at the time of the separation of the slough about ten days after the cauterization and the patient should be informed of the possible bleeding so that she will report for vaginal packing if such should be necessary. There is always an increase in the amount of the discharge for about ten days after which it gradually decreases until about the twenty-first day when healing should be complete. If the desired result has not been accomplished by that time the procedure may be repeated.

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DISCUSSION

OLGA STASTNY, M. D., (Omaha): I think Dr. Grier has brought out some splendid practical points. In the first place, early cautery of these minor erosions is the most gratifying thing that comes to us.

Another important point is clearing up of edematous bleeding cervices and sacral ligaments before cauterizing. I think that has not been stressed before as plainly as he has stressed it. I know it causes a lot of backache, and this care before cauterizing is a good practical point. Early repair after labor is needed. Yet I have seen chronic cervices that have responded so beautifully to cautery that I would like to endorse the things Dr. Grier has told us, particularly in these chronic cases with backache, that are prone to think it is an infectious discharge. Do a biopsy and if negative, to malignancy have them come back in a few months, and you will be happy to see what good results you have.

I thought at first if I did not get the eroded cervix healed with one or two cautery treatments, there was something wrong in my technique. I felt more satisfied when Dr. Bloodgood stated that often some must be cauterized many times for good results.

I think Dr. Grier's paper is really very splendid.

DR. GRIER, (closing): I have been requested to elaborate on the technique of the use of Lugol's solution. Schiller's test is based upon the action of Lugol's Solution upon the glycogen contained in the vaginal mucosa. Normally after puberty it contains a relatively large amount of glycogen. It is increased during pregnancy. When Lugol's Solution comes in contact with the normal vaginal mucosa it stains a deep mahogany brown. If there is a deficiency of glycogen, it will show up relatively white. The less glycogen, the whiter the area is.

There are certain conditions in which it does not stain a mahogany brown: (1) Cystic degeneration of the cervix. (2) Marked round cell infiltration of the cervix. (3) Carcinomas of the portio. In addition, Lugol's solution will not stain columnar epithelium. The only purpose of the Lugol's solution is to determine what areas to biopsy. When you contemplate cauterization of the suspicious cervix, the application of Lugol's will show the areas from which to secure specimens for microscopic examination.

POSTNATAL SUPERVISION*

J. C. LITZENBERG, M. D.,
Minneapolis, Minnesota

Mr. Chairman, Ladies and Gentlemen of the Nebraska State Medical Association: I want to express my appreciation of the honor of appearing before your Society.

The propaganda which has been going on for many years unfortunately has not accomplished the desired results. Specialists can never reduce the maternal mortality of the country. They do not take care of enough cases. It is the general practitioner who must lower the mortality.

Some modern mothers are beginning to educate their little girls about how babies come into the world, so that they may have a proper attitude toward this subject. One such mother thought her approaching confinement would be a good time to educate her little daughter. The little girl had said to her:

> "Mama, are you sick? You go to the doctor so much."
>
> "No, darling; mama is going to have a baby, and she must go to the doctor for prenatal care. She is increasing in size, and has under her heart a little room where a tiny baby is living, just as you did."

A short time after, this woman had an attack of pyelitis, and it was necessary for me to go to see her. After I had gone, the mother was consumed with mirth. She said:

> "I told my little girl about how I was enlarging to make room for a baby, and as much as I thought fitting about how babies were born. She evidently had paid considerable attention to your shape. After a while, she asked me if you had a baby in the little room under your heart."

Unfortunately, the propaganda for the care of the mother, as given by Dr. Adair, has not brought results. It shows how long it takes to educate the public, and even the physician, as to the necessity for prenatal care. The mention of postpartum care has come into prominence more recently.

I made an outline for my student to follow, and will throw this on the screen in order that it may be retained. Of course it begins with prenatal care. When diseases which may have an influence on the mother during her pregnancy may be detected and treated during pregnancy, prenatal care has accomplished much. The objects of motherhood are not completely attained by bringing a healthy baby and a living mother into the world. The mother must be restored to perfect health. Therefore, postpartum care is often necessary for many months.

What is postpartum care? I find it is usually looked upon as the care given for two weeks following childbirth. It does not end at that time. It ends when that woman is restored to perfect health, not to ordinary health. To that end. I have divided it into three periods:

1. The immediate, or lying-in period.
2. The intermediate, or that period of two months during which —— is completely attained.
3. The remote partum, which ends with the restoration of the mother to perfect health. Many physicians do not realize its importance.

We can only consider a few of the points under each heading. I shall outline them briefly.

The first is anemia. Treatment should begin during pregnancy, if the woman has anemia. The prevention of blood loss during labor is important. As to the anemias which follow childbearing, too many women do not have blood examinations frequently after delivery and during the interim of remote partum, until the blood is restored to normal. That is the cause of invalidism in a great many women. We can say this: We do not realize the importance of conserving blood during delivery and after delivery—the conservation of every drop of blood possible.

You will realize how much blood a woman loses only by measurement. You will appreciate the quantity by having two or three basins in which you can collect the blood. If you do this, you will find yourself alarmed at the amount of blood which a woman loses, unless great care is taken to prevent it by careful watching of the uterus after delivery—for example, in the immediate partum.

I had this impressed upon me in the private hospital by a remark reported to me, made by one of the nurses. She said, "Why is it Dr. Litzenberg's patients have so little bleeding?" They had noticed my patients bled less than the patients of many of the other physicians. The reason for this is that as soon as the baby is born, my hand, or the hand of an assistant, or of a nurse trained for this, is placed upon that uterus and kept there until the placenta has been delivered and bleeding has been stopped, or gotten down to a normal amount.

We have seen too much about how a woman can recover from hemorrhage after delivery. We have been too content with saving her life, and not anxious enough about her health, and about preventing invalidism. If you can keep the loss of blood under 400 cc., you have conserved the woman's future health.

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Now as to infection: Dr. Adair has spoken about the prophylaxis of infection. It is unnecessary to say asepsis or antisepsis are necessary.

I want to emphasize remote results in postpartum care. The woman must be under treatment not only until the disappearance of fever and leukocytosis, but we must examine the heart, lungs, and kidneys. Not infrequently an endocarditis or insufficient heart may be the result of that infection. The lungs, also, must claim our attention.

I have some slides which Dr. Findley sent me about the remote results of puerperal infection. We have been too apt to think of the results of infection causing thrombosis, etc., but not of the remote consequences to the kidneys and heart. Pyelitis and cystitis consequences of pregnancy. Dr. Adair has included these in prenatal care.

Here is another thing that is included—the treatment of pyelitis and cystitis until every vestige of the infection has disappeared. Either is a great menace to the future health of the woman. Pyelitis may exist during pregnancy, but every bit of this infection must be eliminated. Many women who are untreated develop nephritis.

May I give an example to illustrate the remote results, and that is the thing in which I am particularly interested. The prevention of even a remote degree of invalidism should be your aim. One of my patients had pyelitis during pregnancy, with high temperature, and pus in the urine. She received the usual treatment. Was put to bed, given large quantities of water, and urinary antisepsis. Within two weeks, the pyelitis had disappeared. We had to continue this treatment all through pregnancy. We did not succeed in eliminating the pus cells. She was watched until delivery. After delivery, she was told of the danger of this thing. She was not having any symptom whatsoever. She was told she ought to go to a urologist who would treat her until it disappeared, possibly by lavage, etc.

I referred her to a urologist. On the way to his office, she met a friend who said:

"Where are you going?"

"To see Dr. So-and-So."

"Are you sick Are you having kidney trouble?"

"I had a little trouble while pregnant, and Dr. Litzenberg said I must have this entirely cured."

"Don't go to him. He will take your kidney out. That's what he did to me."

This friend had a tuberculous kidney, so of course the doctor had removed it.

My patient never went to the doctor. I should have seen that that woman did go. Because she told me she would, I took it for granted she had gone. I was very much chagrined and sorry, two years ago when this woman came into my office seven years after this, pregnant again. You can imagine my consternation when I found she had, just in her early pregnancy, a reduced quantity of urine, and casts and pus in that urine and the sequel—nephritis. She had no evidence of nephritis seven years before. It was so severe that we contemplated emptying the uterus, but Nature did that for us.

Six months later, the woman was dead. If she had followed my advice, or if I had seen she did, she probably would be living today. I have no doubt her nephritis, which she did not have when I told her to consult the urologist, was caused by that infection which had existed all that time.

We must follow these cases.

It is not necessary to say more about prenatal care and the attention toxemia should have. It isn't over when the acute symptoms have disappeared and the blood stream has come to normal, and there is no longer albumen and casts. These women must be watched for a period, for the reason that periodically there may appear albumen and casts in the urine. Therefore, every woman who has had a toxemia must be examined not only until the albumen and casts have apparently disappeared, but until repeated examinations prove they have disappeared.

I should like to emphasize one of Dr. Adair's remarks that at the well-conducted maternity centers and teaching clinics, eclampsia has become almost unknown. I had one of my residents look up its history for a period of eight years, and not a single case that had been in any prenatal clinic in Minneapolis occurred in the University Hospital, showing what prenatal care will do in the prevention of eclampsia. These women must be followed up until the sequelae have disappeared.

Displacement of the uterus is a frequent source of invalidism in women. Now, these displacements usually occur after the delivery. With the lengthening of the ligaments and the change in the pelvic floor during pregnancy, the wonder to me is that all women do not have them. Many may be prevented by proper exercise. Every case at the University Hospital and in my private practice is instructed in walking.

You remember that paper of Beck's a few years ago. He is fond of going to the zoo and watching the monkeys. One day he said, "Monkeys do not have misplacements. I wonder if we could not have the monkey walk for women?"

He went back to the Long Island Hospital, and every other woman was given the monkey walk. He found there were fewer misplacements among those women who had practiced this monkey walk—walking on the toes and hands. Dr. Beck thought it was an inelegant term, so he changed the name to the "kangaroo walk".

I gave this instruction as to the kangaroo walk to a modern mother—God bless them! She said:

"My little girl asked 'What are you doing?' "
"I am playing menagerie."
"I want to play menagerie."

This mother had four children. Gradually each child found out about the menagerie, and at a certain time each day, this woman was accompanied by her children. She had to go through the hall and into the bathroom and back. She had her party. This walk is better than the knee-chest position.

According to my figures. 90 per cent of the women with displacements will be cured if the uterus is replaced. My method is to replace it without a pessary. At the end of the intermediate period, if the woman has a displacement, the uterus is replaced, and a properly fitting pessary is adjusted. She must keep it there several months. I found 90 per cent of them were cured.

I looked up statistics on women who had had uteri replaced and a pessary put in even longer after delivery than that, or women not delivered at all, and I found, not much to my astonishment, that the figures were nearly the same. Ninety per cent of those women were cured of displacements when the pessary was taken out.

Many cases of neurosis are born in the delivery room when the baby is. Sometimes it is a psychosis. Again, it is cervicitis. The infection of the cervix occurs in all cases of women who have had sepsis, and in a large percentage of those who have not. Cervicitis is increased by lacerations. The glands of the cervix become infected, and we have leukorrhea and erosion. We may have pelvic cellulitis, or peritonitis, or pericarditis, or nephritis. So the ultimate consequences of proper postpartum care are far-reaching.

Finally comes cancer of the cervix. There is one thing about which we agree in the etiology of cancer, and that is it occurs in places of chronic irritation. Dr. Bloodgood says it is never known to occur in scar or healthy tissue. The lacerations and the scar tissue holding the cervix open favor chronic infection, and where there is chronic irritation, there is fertile soil for cancer. Many cases of cancer of the cervix originate at the delivery table. This could be prevented by proper cure of a cervicitis. How many of you have said, "That discharge will disappear"?

I have these women come back frequently and observe them, not for two weeks, six weeks, or eight weeks; but for many weeks. That woman is treated until the infection of her cervix has been entirely cured. A case of an infected cervix is as dangerous a focus of infection, although perhaps it does not occur as often, as infections of the teeth and tonsils. I have seen conditions like rheumatism cured by curing an infected cervix.

I want to leave this message with you. A cervicitis is a precancerous condition, because it produces chronic irritation. Cervicitis may be cured by medical treatment or cauterization or repairs of the cervix.

I have taken the liberty of having pictures made of this beautiful illustration of Dr. Matthew on the treatment of cervicitis with cautery, which may be done in the physician's office, and only the worst cases taken to the hospital.

In the multiperous woman who has an erosion, make the sign of the cross and you will get a good result.

The ultimate welfare of the mother can not be secured by good postpartum and immediate care alone. She requires meticulous care during the lying-in period; correction of abnormalities before discharge from the hospital; re-examination at the end of the intermediary period, and continuation of observation and treatment until she is restored to perfect health.

Finally, if adequate postpartum care be not carried to its ultimate conclusion, whatever length of time is required, the results may be anemia, general ill health, endocarditis, nephritis, neurosis, psychosis, permanent displacement, cancer, or death.

Grace: "Why do you keep going to the doctor? He said it was no longer necessary."

Doris: "I'm reading a continued story in one of his waiting room magazines."

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Christmas

But Christmas is not only the mile-mark of another year, moving us to thoughts of self-examination,—it is a season, from all its associations, whether domestic or religious, suggesting thoughts of joy. A man dissatisfied with his endeavors is a man tempted to sadness. And in the midst of winter, when his life runs lowest and he is reminded of the empty chairs of his beloved, it is well that he should be condemned to this fashion of the smiling face.

—ROBERT LOUIS STEVENSON.

CALL FOR PAPERS

If you wish to read a paper at the next annual meeting in May, 1934, please send your title and name to R. B. Adams, Secretary, Center McKinley Bldg., Lincoln, Nebr.

FEDERAL EMERGENCY RELIEF FUNDS TO REIMBURSE PHYSICIANS

If the executive officers and councilors, who are the trustees and the directing heads of the Nebraska State Medical Association during the interval between annual meetings, agree shortly to a plan for taking advantage of the emergency medical relief offered under the Emergency Federal Relief Act, there will be made available to the profession of Nebraska a portion of the Federal Relief funds in payment of emergency care for the indigent. If prompt action is not taken in the matter, it may not be worth while, for we do not know how long Federal Relief will continue.

The states of Illinois and Indiana have worked out their plans. In Illinois the plans await the action of the special session of the legislature, which is expected to appropriate a large sum to supplement federal aid. Following we quote liberally from the Indiana plan which is now, as we understand it, in working order:

> Emergency Medical Aid to the Indigent is a proper charge against poor relief funds.
>
> The Governor's Commission on Unemployment Relief proposes the following principles and recommends that local relief agencies use them as a basis for working out their own local arrangements on this item of relief.
>
> 1. Local public agencies will agree to pay only for such emergency medical aid as is specifically ordered by the agency through its official representatives, and based upon an investigation and proof of need of the applicant for aid.
>
> In cases of emergency, or at such times as it may be impossible or impracticable to communicate with the authorities responsible, a physician may respond to a call, attend a case, and report such a call at the earliest opportunity to the proper authorities, who shall then make the investigation as soon as practical.
>
> 2. An emergency requiring medical aid shall be deemed to exist where an indigent person is suffering from any acute medical or surgical condition requiring treatment for the elimination of pain or restoration of normal activities, or any chronic condition requiring treatment for preservation of life. It is recognized that there is considerable difficulty in arriving at a definition of emergency medical aid. It is intended by this definition to put a stop to practices in some townships of paying for surgical operations or medical treatments for disabilities of long standing, and in which no emergency is indicated. For instance, there are reports of hernia operations charged to the townships, whereas the disability was known to have existed for a number of years previous to the individual becoming a public charge. Likewise there are reports of tonsillectomies, considerable treatment of persons whose ailment is largely a mental state and for whom medical aid does no good, etc. Such treatments as these should not be ordered by the relief agency. Likewise, it is hoped by this definition to assure treatment for illnesses and surgical conditions that are plainly of an emergency character requiring such treatment to prevent permanent injury or loss of life.
>
> 3. It is recognized that the best results from th

standpoint of the indigent will be obtained if he is permitted to use his customary physician. This should be made possible under any plan, except that extraordinary expense for travel should not be permitted if there is a physician within a given community qualified to give treatments. In general, this purpose should be sought.

4. The service is most likely to be satisfactory if the local relief agency completes an arrangement with the township or county medical association by which the purpose given in paragraph No. 3 can be attained.

5. The method of payment is usually the point of greatest difference. This has given rise to contracts with single or a few physicians within a community, as well as to insufficient medical aid where relief authorities have objected to what they believed to be high costs. Two plans are suggested, as follows:

a. Payment on a fee basis. It is reasonable to pay according to the actual service received. However, it is reasonable also to expect that physicians will be willing to accept a fee for poor relief services much lower than their customary fees. This is indicated not only because of the nature of the work itself, but also because the physician has only one debtor for this service, and usually will be paid with reasonable promptness. It is suggested that fees to be charged shall not exceed fifty per cent of the average fees charged within a community, but that a maximum scale be established which, with possible exceptions, shall not exceed 50 cents for an office call and $1.00 for home calls, with other services in proportion. Exceptions may be arranged also for excessive travel necessary where there is no physician available within a community for needed service.

The above suggestions are submitted for consideration of local relief agencies. The Governor's Commission, however, wishes to add some specific instructions which will apply to all counties receiving Federal aid. They are as follows:

1. Federal aid money cannot be used to pay hospital care or any other institutional care, or for medical aid to chronic cases of the character mentioned in Paragraph 2. There is no reason why hospital bills may not be paid out of local relief funds.

2. Federal aid money may be used to pay reasonable surgical fees but only for strictly emergency operations.

3. Federal aid money cannot be used in payment of medical aid wherever a relief agency contracts with a single physician or a small group of physicians unless the Governor's Commission has approved such arrangements.

The state association must take the initiative in the matter and pass its action on to the county societies. The fee schedule should be the same over the state. In Illinois, Chicago physicians get the same fees that are paid in any place in the state.

THE OMAHA-MIDWEST CLINICAL SOCIETY JUSTIFIES ITSELF

"Something going on every minute" tells in a few terse words the story of the first clinic of the society in Omaha the last of October and first days of November. It is said that those in charge of the commercial exhibits complained that the physicians were too interested in the program to spare time to talk shop supplies. The registered attendance was 420 which in a way indicates the interest of the profession.

The clinical meetings, developed to meet the needs of busy practitioners for keeping in touch with medical advances, have demonstrated their value in cities where they have been held for several years and are attaining wide popularity in the profession. The schedule contemplated a series of clinical lectures every morning and afternoon by guest speakers and varied lecture courses in four rooms by local talent of thirty minute talks between 11 a. m. to 1 p. m. every day. There were buffet luncheons and buffet dinners following which there were addresses on medical economic subjects. Finally on the last day the conference ended with a series of operative clinics, ward walks, diagnostic, wet and dry clinics, clinical-pathological conferences and tumor clinics conducted by 44 Omaha doctors at the University, St. Joseph's and Douglas County hospitals.

In connection with the instruction offered from 12 specialists of national reputation the clinical society presented at the Paxton hotel a scientific exhibit arranged by Omaha physicians and surgeons and a manufacturers' display of latest technical equipment.

The guest talent consisted of Dr. Dean Lewis, Baltimore, President of the American Medical Association; Dr. Joseph C. Birdsall, Philadelphia; Dr. James T. Case, Chicago; Dr. Wells P. Eagleton, Newark, N. J.; Dr. Hugo Ehrenfest, St. Louis; Dr. James B. Herrick, Chicago; Dr. Julius Hays Hess, Chicago; Dr. Edward H. Skinner, Kansas City; Dr. Richard H. Jaffe, Chicago; Dr. Lewis J. Pollock, Chicago; Dr. Kellogg Speed, Chicago, and Dr. Frederick D. Weidman, Philadelphia.

Several informal conferences developed the following dicta:

1. Increasing demand is forcing medical colleges to provide required facilities.

2. Observation through four or five years of private practice is best graduate education for potential specialists.

3. Graduate instruction should be clinical, with observation of patients as principal basis.

4. Conferences of the sort provided by the Omaha Midwest Clinical society are an important aid in postgraduate study.

5. One factor expected to result in further demand for postgraduate facilities is the proposed certifying of lists of competent specialists after examinations by national boards composed of

recognized leaders in the specialty. This program is scheduled to go into effect next year.

The efficiency of Dr. J. D. McCarthy, secretary-director, was generally acclaimed, and much credit was given to the Omaha profession for underwriting the clinics.

THE WESTERN NEBRASKA CLINICAL ASSEMBLY

The Eleventh and Twelfth Councilor Districts Medical Societies jointly promoted a clinical assembly at North Platte early in November with a program that would have done credit to an annual state meeting. The meeting was arranged jointly with the dental groups of that area who met at the same time and place and several joint programs and joint social functions resulted.

Among guest speakers were Dr. Boyd Gardner and Dr. John Pemberton, Mayo clinic; Dr. K. S. J. Hohlen, Lincoln; Dr. Adolph Sachs, Dr. B. C. Russum, Dr. Floyd Clarke, Dr. A. D. Dunn, Dr. W. P. Wherry, Dr. Roy Fouts, Omaha.

The interest in all the programs was keen.

In the neighborhood of three hundred physicians, dentists and their ladies were in attendance. The ladies, with the Woman's Auxiliary as a nucleus, enjoyed several exclusively feminine functions.

The social spirit and hospitality of the west prevailed. Emulating "Buffalo Bill," whose portrait is much in evidence in North Platte, one of the mighty hunters of the local medical profession, made a special trip to the Kaibab forest in northwestern Arizona and brought home the venison for the joint banquet, while other "medics" bagged the wild ducks for the joint duck dinner.

These clinical assemblies are to be a permanent institution and already we are told an additional councilor district is ready to become allied with the movement.

THE END OF VOLUME XVIII

The final number of Volume XVIII is before you, and it is for you to pass judgment on the value of the year's work.

Due to the economic stress the reading pages of the *Journal* during the year were held down to forty, monthly, with one exception.

The editor would like to believe that the quality of the contents have been above the average and that the *Journal* reader has not suffered a loss.

A survey of the *Journal* contents for the year gives the following information: Original articles—103, pages 309; personal editorials in inches, 575; editorial paragraphs, in inches, 354; signed editorials, in inches, 476.

AUTOPSY PROBLEM: ITS SOLUTION IN SMALLER COMMUNITIES

Dr. George W. Covey, Lincoln (*Journal A. M. A.*, Oct. 14, 1933), discusses the means by which a moderate sized city, without a medical school, can overcome the obstacles of not having a laboratory for the performing of necropsies. The method principally consists of sharing the expense for the maintenance of such a laboratory by the city hospitals. The author states that Lincoln physicians have by the method outlined developed such an interest in necropsies that over a period of fifty-three months they have done 657 necropsies with complete records, examined and recorded the histopathologic observations, and properly correlated the clinical and pathologic observations in a large number of them as a staff function of the hospitals. This constitutes a necropsy percentage of 15.5 on all deaths in the city for this period, which is over eight times the general average in the United States. The author concludes that there is great need of increasing the number of well done and well studied necropsies, especially in the smaller communities. To do this the medical profession must be made necropsy conscious and the necropsy must be made interesting and profitable to the physician. The cooperation of the mortician is necessary; it can be had and it is invaluable. A plan such as the one adopted in Lincoln is workable and could be adapted to almost any community.

FREE WHEELING IN THE TUBERCULOSIS MOVEMENT

Steadily, for more than a quarter of a century, the number of deaths from tuberculosis has grown less. In 1900 the death rate from this disease was 202 per 100,000 population. This rate has declined on an average of about 4½ points each year so that in 1930 the rate was 71 per 100,000 population. Until the beginning of the depression this favorable trend was attributed by health officers mostly to a steadily rising plane of living of the American people. Other factors, of course, were given due credit, but what could be more logical than to assume that tuberculosis, a disease known to go hand in hand with poverty, should decline with the rise in wages, better housing, more abundant food and more leasure time?

But suddenly our prosperity buckled a wing or something, and spun off into the most desperate depression this country has ever seen. No wonder that from various quarters one heard the prediction that the tuberculosis death rate would rise. Actually a strange thing has happened. During the four years of depression deaths from this disease have continued to decline. There stands the record of the past four years. It gives us no inkling of what may happen in the future but it is a strange phenomenon. How can we account for it? Have our previous teachings been wrong or is there something unusual about this particular depression?

Of all the explanations offered the one which seems most probable is that the momentum of the tuberculosis movement has been carrying us through just as the free wheeling device on the auto enables the car to speed on for some distance with a minimum consumption of gas. Thirty years ago tuberculosis was permitted to run its course almost unmolested. Then in 1904 a few courageous doctors dared to challenge the old enemy. That set in motion the popular movement which since then has built in this country more than 600 sanatoria, established diagnostic clinics in nearly every community, mobilized an army of public health nurses and broadcast knowledge about tuberculosis to the remotest corners of the land. Thanks largely to the money derived from the sale of Christmas seals the movement gained power year by year. Once going, even the drastic economies of these recent times could not, apparently, stop the good effects.

How long the tuberculosis movement can continue on free wheeling no one knows. Certainly it cannot be indefinitely. In an emergency the American people can do great things. Health departments and sanatoria have continued to function with meager funds. Cheap food, low wages and the loyalty of employees have enabled them to do so. Some doctors and nurses have worked on for nothing more than board and lodging. But that cannot go on. Sooner or later sanatoria if not properly supported will have to close their doors. The patients will be thrown back on their helpless communities soon to die. Well people compelled to live with them will be in danger of getting the disease. Without the watchful care of the public health nurse the control of the spreaders will relax and more disease will follow. And so with the other measures necessary to keep a controlling hand over tuberculosis. On an up grade free wheeling is no good whatever.

Health is won by long-time planning. Tuberculosis does not kill immediately. Nor can it be kept down by occasional spurts of energy. Only by steady progress can we hope to overcome it.

The object of tuberculosis associations is to keep the tuberculosis machine running—powerfully and smoothly. Lost momentum must be regained. The end of the hard journey to the place where every family can be assured of safety against tuberculosis is not yet in sight. If we roll back now our children will have to re-travel much of the hard earned progress won in the past, and in the meantime many of them will sacrifice their lives. Harsh economy must no doubt still be practiced but when health is at stake penny pinching is expensive business and leads only to more expense. A quick pick-up is the order of the present day. Christmas seals stimulate health work of all kinds and furnish the power to carry on the fight against tuberculosis.

—H. E. Kleinschmidt,
Director, Health Education,
National Tuberculosis Association.

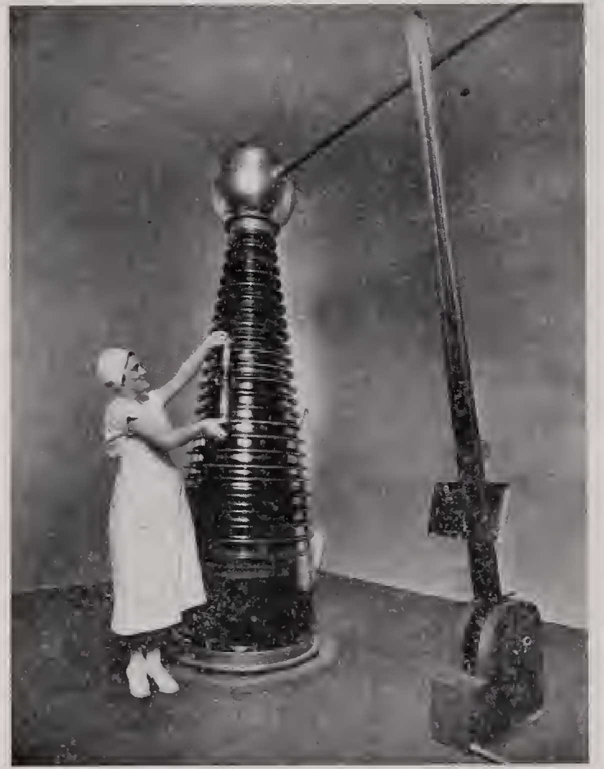
SUPER VOLTAGE RADIATION

As the result of five years of experimental work at the California Institute of Technology under the direction of Dr. Charles C. Lauritsen, a giant x-ray tube has been developed which will withstand a million volts. Measurements at the California Institute of Technology, as well as those by Dr. Lauristen S. Taylor of the Bureau of Standards, show a marked improvement in the depth dose at any given distance from the surface. At a depth of 10 centimeters the average depth of a tumor in the center of the body, it is possible to deliver through one port a depth dose of 60% of the skin dose.

This opens a field in high voltage roentgen therapy not hitherto obtained. What this may mean to medical practice of the future staggers the imagination, says Soiland in the *Journal A. M. A.*, September 30, 1933.

It is thought that high voltage may largely supercede radium treatment because radium lacks the penetrating power when compared with the enormous output of the new x-ray tube. Radium must be placed close to the skin or implanted in the tissue and has some disastrous cautery effect, while the rays generated from high voltage x-ray machines have extreme penetrating ability without cautery effect or destruction of the tissue.

Even though it is sometimes advisable in cases of cancer of the uterus, or other tumors where this procedure can be used, to give a primary dose of radium in the tumor itself and then apply high voltage x-ray over a wide area surrounding the uterus or tumor, in sufficient quantities to produce destruction to any cell implants which may be in the lymphatics draining the affected area. Although radium offers some advantages in the treatment of tumors there are also disadvantages.



Super Voltage Tube 16 feet long, 3 feet in diameter at bottom.

The effect may be divided into three different reactions. In the first zone immediately surrounding the radium it is necessary to produce a cautery effect in order to properly radiate the second zone with sufficient gamma rays to have a desirable effect on malignant cells. In the third zone or the area immediately surrounding the second zone the effect of radiation is so diminished that its influence on malignant cells is of a stimulating rather than a destructive action.

The average dose of super voltage radiation paralleling gamma rays of radium is equal to a four gram pack of radium. High voltage x-ray, 600,000 volts constant potential or more, is administered at a distance of 60 or 70 centimeters which provides a much better depth dose without cautery effect than radium, even though one is using four grams of the element. Larger areas may be treated and at much greater depth since radiation is the same from one side of the body to the other.

It is stated on behalf of the high voltage current, 500,000 to 600,000 constant potential, that it is non-cauterizing, that there is no pain, no inconvenience and no suffering or radiation reaction as a result of the treatment, and that the patient, unless bedfast, is able to be up and about and suffers no ill effects.

More rapid recession under this type of radiation is claimed than has ever been noticed before under any circumstances. Due to the fact that all of the long wave lengths of x-ray radiation are filtered out the bothersome radiation reactions which commonly occur on the skin during radiation with lower voltage machines does not occur when treatment is administered by the super voltage equipment. There is no appreciable skin reactions and, therefore, no x-ray burns.

The machine which was installed at the Lincoln General Hospital several months ago required a new building to house it. It is marvelous in construction and occupies the first two stories of the new wing.

The x-ray tube is made of porcelain and is 16 feet in length, 3 feet in diameter at the bottom and projects through the floor into the center of the treatment room. It weighs 1½ tons.

Dr. L. S. Taylor of the Bureau of Standards at Washington is quoted as stating he believes this machine to be the largest in the world. There are, besides the two experimental machines at the California Institute of Technology and the Memorial Hospital in New York, one in Los Angeles, one in Chicago, and one in Detroit.

This *Journal* stands for conservatism in medicine, and we are not prepared to pass judgment on high voltage therapy, but the courage of those who made the installation possible appeals to our imagination.

Dr. Roscoe L. Smith, radiologist, is responsible for the installation at the Lincoln General Hospital.

MEDICINE AT THE CROSSROADS

Harvey Cushing, Boston (*Journal A. M. A.*, May 20, 1933), says: "A recent leader of public opinion openly states that most of those at present dealing with the sick—meaning more specifically the doctor—have their faces turned toward the past. If history but repeats itself, where else but from the past *can* we learn anything? We certainly can draw little comfort and few admirable lessons from the late present. . . . Lay reformers speak lightly of his code of ethics as something long since outworn, but so far it has prevented him, for one thing, from capitalizing for his own benefit his inventions and therapeutic discoveries. . . . By the combined efforts of both groups, doctor and sanitary official, the expectancy of life has been greatly prolonged—and will be more so before we are through. Yet while we point to this triumph, there are just so many more people who live longer only to be overtaken, the health official with the rest, by unforeseen and unpreventable accidents for which they seek the best surgeon they can find, or by some malady for which they demand the very best physician—like enough a highly trained specialist. . . . Legislation and attempted coercion do not always accomplish what reformers anticipate. . . . There has been much idle talk, too, regarding scientific medicine and the modern scientific doctor who with his ingenious appliances and mathematical exactitude has come to supplant the old-fashioned "practical" doctor. . . As a matter of fact, it will be a great shock to laymen to learn that a great part of what is called scientific medicine is a fetish and wholly unscientific. . . . The practice of medicine is an art and can never approach being a science even though it may adopt and use for its purposes certain instruments originally designed in the process of scientific research. . . . The explanation of the doctor's seeming want of business acumen lies partly in the restraining influence of his time-honored precepts of conduct, partly in his preference to hold the respect of his own kind rather than of the financial world, and partly because inherently he's that kind of person else he wouldn't have gone into medicine in the first place. . . . A form of legal racket which thrives on the insurance system at the expense of the profession is the rapidly spreading prevalence of malpractice suits, particularly against surgeons, for imaginary grievances sustained, more often than not, as the outcome of some operation done purely for charity. . . . Whether we have temporarily overstressed science and research in medical education and let it come to enslave us is not for any one to say. If it has, the day will arrive when of itself the pendulum will swing and there will be a corrective reaction, for there usually is to whatever we overdo. . . . There are two sides to every question, and inability to see both constitutes the fundamental weakness of all theories and particularly those relating to the biologic and social sciences. . . . But however this may be, those who deal with the science of society deal with something that actually does pulsate with so short a time cycle that conditions almost from year to year are never quite the same, so that our theories of today are likely to need modifying tomorrow."

ALLERGY HINT X

Unrecognized sensitivity to foods is often a cause of failure in the treatment of a seasonal hay fever. —Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT XVI

There is no short-cut or snap-shot method of diagnosing tuberculosis, no method or test or machine or picture that will take the place of a thoroughly trained physician's brain, that isn't too lazy to think and has courage enough to face its problems. —Miles J. Breuer, Lincoln.

EDITORIAL PARAGRAPHS

Dear Doctor: Remember that your wife also wants to read the *Journal* and take it home to her.

Tuberculosis incidence has been reduced to about 1/3 of what it was thirty years ago, we are told.

Having done your duty by the Red Cross, remember that the anti-tuberculosis movement also appeals for your mite.

Emil Roux, who discovered diphtheria antitoxin coincidently with von Behring, died early in November. He was a recluse wholly devoted to science.

As if out of a clear sky, appeared a number of cases of amoebic dysentery, in a Chicago hotel, recently. Carriers were found among the kitchen help.

New Jersey medical politics has deprived that state of the services of Dr. H. O. Reik, nationally known editor for the past eight years of the *New Jersey Medical Journal*.

The Nobel prize in physiology has been awarded to Dr. Thomas Hunt Morgan, director of the William G. Kerckhoff Laboratories of the California Institute of Technology.

An inability of the authorities of the city of Lincoln and Lancaster county to come to an understanding on the question of a joint health officer, resulted in a stalemate on the problem, which is to be regretted.

Dr. Robert C. Coffey, Portland, Oregon, one of the world's great surgeons, lost his life recently in an airplane crash, while on his way to operate on an emergency case in a distant city. He developed the operation of ureter-rectal anastomosis.

Among medical men of the present a distinctive physical type has developed within recent years. Medium size, somewhat stocky, clean shaven, more or less bald, wearing jauntily a light grey hat with black band—they all look so nearly alike you cannot tell one from another.

During 1932 The Rockefeller Foundation appropriated $11,577,064 for projects in the fields of the medical, social, and natural sciences, the humanities, and public health. A printed report on these activities has just been issued. For public health work the Foundation expended during the year the sum of $2,539,057.15.

Dr. William R. Bathurst, Little Rock, editor of the *Arkansas Medical Journal* since 1912 and secretary of the Arkansas Medical Society since 1919, died suddenly, August 31, 1933, aged fifty-six years. Besides being a physician of ability to heal, he was given to public service for which he had talent, firmness and good judgment.

The *Journal,* the last few months, has been carrying four more pages of advertising than it did at the low ebb the early part of the year. Extensive and consistent advertisers like Parke Davis & Co., Eli Lilly and the Cocomalt people have already renewed their contracts for another year. We feel optimistic.

The "Report of the Committee on Economics of the Lancaster County Medical Society for 1933" is before us. It is a multigraphed volume of sixty pages in flexible fabric cover. It is the most considerable study ever made in this state and has to be studied, individually, to be appreciated.

From the *Wisconsin Medical Journal* we gather an idea useful in electing delegates to the annual meeting of a state association. At election time the president asks all of the members who expect to attend the annual meeting to rise to their feet. It seems easy then to elect a delegate pretty sure to attend and do his part in the house of delegates.

The American Association for the Study of Goiter, for the fifth time, offers Three Hundred Dollars ($300.00) as a first award, and two honorable mentions for the best essays based upon original research work on any phase of goiter presented at their annual meeting in Cleveland, Ohio. June 7th, 8th, and 9th, 1934. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter.

Commenting on a medical society meeting of all home talent, in a recent number, brought the following response from one of the outstanding out state men in the profession: "The younger men should be encouraged to present these cases at the county meetings. Have always been a booster for a program where the young fledgelings should try their wings. Too often they are made to sit back and listen to the words of wisdom from their elders." Isn't it so?

A statistical study of one hundred and fifteen cases of cancer at the Bryan Memorial hospital is before us. This study is principally of value to emphasize in a glaring way the needless wastage of human life by neglecting the *sine qua non* of recovery—early diagnosis and proper treatment, and that a reasonable degree of success is attending the proper treatment of recoverable cases. It also indicates that for greater efficiency a cancer and consultative staff group is important. It further shows that the laity needs education.

Fifty years ago there were very few dentists in rural Nebraska. It is recalled that the town from which this is written was visited by one dentist twice during the year 1882 and he remained about two weeks during which time he was kept very busy. The following year a second dentist had two appointments of a week or possibly two in the town, alternating with the first one mentioned. These dentists worked circuits. We well recall the first resident dentist. He was a fat, pompous, oldish man, wore a frowzled silk tile and a white vest bespattered with tobacco juice and he had the breath of an alcoholic. Within a few years respectable and educated dentists located in the smaller towns.

"A History of Artificial Pneumothorax in America," which will run in five installments, begun in the September number of the *Journal of the Outdoor Life* (National Tuberculosis Association). The series is by a well-known physician who has spent more than three years in gathering and compiling the material.

The comparatively recent rise of surgery in the treatment of tuberculosis has focused the attention of both tuberculosis specialists and of general surgeons on this method. The series of articles traces the history of the use of artificial pneumothorax from the very first mention of this method of treatment in America, made in a communication written by Dr. Daniel McRuer in 1835 and published in the *Boston Medical and Surgical Journal.* Naturally, much stress is laid on the paper read by Dr. John B. Murphy of Chicago in 1898 at the Denver meeting of the American Medical Association. The unfortunate conflict on priority between Murphy and Forlanini is also discussed and the strange lapse of interest for a decade following the death of Lemke, Murphy's associate, in 1904, is graphically recited. The author then comes down to the more recent developments during the first two decades of the present century and brings the history to the present time.

NECROLOGY

M. Josephine McChesney, Osceola, Nebr.; State University of Iowa College of Homeopathic Medicine, 1888; practitioner at Osceola from date of graduation until retirement a few months ago; died November 10, 1933, aged eighty-two years.

Henry S. Strouse, Omaha; Hahnemann Medical College, Philadelphia, 1866; died of myocarditis, aged sixty-five years.

Charles E. Sayre, Norfolk, Nebr.; Hering Medical College, Chicago, 1894; University of Illinois College of Medicine, 1897; sometime instructor in comparative anatomy, and gynecology and obstetric, in several Chicago medical colleges at different times; in practice in Chicago until his removal to Norfolk, eleven years ago, since which time he has specialized in general surgery in Norfolk; member, Nebraska State Medical Association; a noted rifle shot; died November 18, 1933, of double pneumonia, aged seventy-three years.

Oscar H. Hahn, Hastings, Nebr.; native of Maryville, Kan.; Ensworth Medical College, St. Joseph, Mo., 1908; in practice in his home town, Maryville, for nearly two years; superintendent of the former Nebraska Sanatarium at Hastings from 1910 to 1915; surgeon in Hastings since 1915; member, Nebraska State Medical Association; sometime president of the Hastings Lions club; died of cerebral hemorrhage, November 23, 1933, aged forty-eight years.

AUXILIARY NEWS NOTES

The Executive Board of the Woman's Auxiliary to the Nebraska State Medical Association held its annual meeting at the University club, Lincoln, October 27. Sixteen members and four guests were present.

The meeting was called to order by the President, Mrs. B. F. Williams.

Mrs. J. M. Woodward, president of the Lancaster County Auxiliary, gave the plan of work to be carried out this year. There are to be talks by members of the Lancaster County Medical Association at the Parent-Teacher Association meetings and also at the various women's organization meetings, also health pamphlets to be distributed at these meetings, and work with the tuberculosis society.

Mrs. John C. Thompson, chairman, announced the new method of publicity. The American Medical Association is giving the auxiliary two loose-leaves in their Journal. It is requested that notices and reports of interest be sent to Mrs. Thompson, who will see that same are forwarded to the American Medical Association and also to The Nebraska State Medical Journal before the 15th of each month.

The treasurer's report showed a balance of $148.43 in the treasury.

A letter from Dr. Adolph Sachs, chairman of the State Advisory Committee, giving suggestions for the year's work, was read.

Suggestions for increasing the membership and attendance, by having worth-while programs and concentrating on health education, were made by Mrs. Sachs, Mrs. Miner and Mrs. Long.

Mrs. C. W. Pollard, chairman, reported preliminary outlines on health education for use in future programs ready to be sent upon request.

Mrs. G. Neuhaus, president of the Douglas County Auxiliary, reported that they had had a membership drive, an attendance drive, then a victory tea, also a joint meeting with the Douglas County Medical Association with 300 present. The objective for the auxiliary is to be a city-wide health week in May with health programs, contests, rally, radios, slides, dramatic programs, etc.

Mrs. N. T. Van Meter, president of Dodge County Auxiliary, reported five dollars given to the Crippled Children's fund, ten dollars to the Student Loan Fund, obstetric kits placed in two hospitals, five dollars given to the undernourished children's lunch fund, also a health program to be given before the Woman's club the following week.

Mrs. A. T. Hubbell, president of the Auxiliary of Hall-Merrick-Howard Counties, reported their plan to do social relief work, sewing, library extension. They have held their membership tea and the dues have been increased to $2.00. There were 641 books circulated at St. Frances hospital from May 1, 1933, to October 17, 1933, the total circulation since June 15, 1932 to date is 2,318 books. A meeting is planned for each month at which time the auxiliary will attend dinners given by the Medical Society of Hall-Merrick-Howard Counties.

Mrs. H. R. Miner of Richardson County Auxiliary is working through Parent-Teacher Association and Woman's club. A program on prevention of blindness by Dr. Stonecypher was arranged by the auxiliary for the Woman's club. Mrs. Miner talked to the Medical Society and brought to them a message from Dean Lewis.

Mrs. Miner asked the Public Relations chairman to send to the county chairman health publications.

A bill for $5.92 for treasurer's expenses was allowed.

Announcement of the advisory committee was made —Dr. Sachs, chairman, Dr. Lehnhoff, Dr. Farnsworth.

The president announced that each county auxiliary must have at least two advisory members from the County Medical Association.

Mrs. Elmer Hanson, chairman of Public Relations Committee, urged the county auxiliaries to make use of information, pamphlets and materials furnished by the state and national organizations and by the American Medical Association for their county health programs.

The chairman also recommends:

1—That each county auxiliary have a public relations chairman to keep in touch with all of her county organizations and arrange for speakers on health.

2—An extensive campaign in schools and other organizations for essay contests on health subjects, prizes to be awarded and winning essays published and broadcast when possible. Also health plays, poster drawing, etc.

Mrs. Floyd Rogers, historian chairman, reports the scrapbook progressing and would appreciate any clippings from the different county auxiliaries.

It was announced that Nebraska has two women on the National Board, Mrs. Miner and Mrs. Tomlinson.

* * * * * *

Mrs. J. M. Woodward, president of the auxiliary to the Lancaster County Medical Society, was hostess November 8, 1933, from two until five o'clock at a tea for the members. Mrs. Everett Angle headed the committee in charge of arrangements and she was assisted by Mrs. J. E. M. Thomson and Mrs. Torrence Moyer. Assisting hostesses were Mrs. Fred Teal, Mrs. E. S. Wegner and Mrs. J. J. Snipes. Mrs. B. F. Williams and Mrs. Clarence Emerson poured and assisting with the serving were Mrs. G. R. Underwood and Mrs. J. Marshall Neely.

At the business meeting preceding this the Public Relations Chairman reported definite contacts with the League of Womens Voters, the Junior League thirty Parent-Teacher Associations, besides having furnished three medical speakers for the latter's programs. Members were urged to give their old toys to the Social Welfare Society to be remade for Christmas of less fortunate children.

A report was given on the summer class for tuberculous children unable to go to camp, to which project the auxiliary gave $15.00 last spring.

It was decided to have three more frequent meetings than in the past—five from January until summer. Plans for study groups—health or the preschool child—were enthusiastically discussed.

* * * * * *

Sunday evening, November 5, the North Platte members of the Lincoln County Auxiliary of the Lincoln County Dental society, were hostesses to thirty-five out state guests at a seven o'clock reception and tea at the Hotel Pawnee, incidental to the West Nebraska Clinical Assembly. Following this a medical sound film was enjoyed at the Fox theatre.

The ladies of the medico-dental auxiliaries entertained at a Dutch treat luncheon at the hotel Monday noon. Forty attended. Mrs. C. F. Heider, president of the Lincoln County Auxiliary presided. A number of musical selections were given.

Mrs. Fred Rincker, National Chairman of the Hospitalization Board of the American War Mothers was honor guest of the Dental Auxiliary; Mrs. M. E. Scott, president of the Nebraska Federation of Women's clubs was honor guest of the Medical Auxiliary. Both responded with short talks.

Short talks were also given by Mrs. Floyd Clarke, Omaha; Mrs. Morris Nielsen, Blair, and Mrs. Lucien Stark, Norfolk.

Mrs. F. A. Long, honorary director of the Woman's Auxiliary of the Nebraska State Medical Association, was the honor guest speaker and gave the address of the afternoon on "The Aims of the Auxiliary."

A Dutch treat breakfast was given at the hotel, Tuesday morning, followed by bridge. A Duck luncheon given at the Hotel Pawnee Coffee Shoppe was the closing attraction for the ladies.

* * * * * *

Coincident with the meeting, October 10, of the Hall-Merrick-Howard Counties Medical society at Grand Island, the Woman's Auxiliary met, with fourteen in attendance, and Mrs. Zimmerer and her daughter, Mrs. Jacobs, as guests, following a brief business session, completed work on three bed comforters to be used in social service work.

Previous to their separate meetings the doctors and their ladies enjoyed a dinner party, served at the hospital by the sisters of St. Francis.

NEBRASKA MEDICAL AUXILIARY HEALTH EDUCATION—1933-34

I. There are 3 main objectives of Health Supervision:

1. Protection of child from contagious disease; Immunization; Quarantine.

2. Observation of individual children to note early indications of physical conditions and defects that may become detrimental to child's development and health; Pre-school Examination; School Nurse.

3. Establishing early in child's life proper daily habits in regard to cleanliness, diet, rest, exercise, sleep, etc., so his development may proceed normally; Child Clinics; Parent Teacher Groups; Adult Education Classes.

II. Join Parent Teacher Groups and learn the value of cooperating with teachers, school board, and boys and girls. From these associations will come a community demand for the pre-school clinics, the periodic examinations and the correct information regarding procedure for immunization, quarantine, handicapped and exceptional children, dependent and delinquent children, recreational centers, or local play grounds for the unemployed boys and girls, narcotic laws and social hygiene laws.

Medical and Health Publications for the Layman, A. M. A. Assn., 535 Dearborn Street, Chicago.

Auxiliary Handbook, 40 cents. Other publications from Auxiliary are free. Mrs. A. B. McGlothlan, 821 N. 24th St., St. Joseph, Mo.

National Tuberculosis Association pamphlets, 450 Seventh Avenue, New York City.

The Children's Charter, White House Conference on Child Health and Protection, Washington, D. C.

Rules and Regulations and all pamphlets on Health from Nebraska epartment of Health, Dr. P. H. Bartholomew, State Capitol, Lincoln.

Subscribe for Hygeia and use contents for your study.

III. Major Contagious Diseases:

Scarlet Fever, Diphtheria, Small Pox, Poliomyelitis, Epidemic Encephalitis, Cerebro Spinal Meningitis.

These should require a written statement from Health Department before readmission to school.

Minor Contagious Diseases:

Measles, German Measles, Chicken Pox, Mumps, Whooping Cough.

Required to stay out of school from five days to three weeks according to the disease and upon advice of doctor or health department.

All contacts should be inspected and kept from school until sure they have not the disease.

Other contagious conditions:

Skin cases—scabies, impetigo, ring worm.

Head cases—vermin.

Colds.

Pink Eye.

Visit your Health Office (city and county). Learn the personnel, method of quarantine and immunization, where and how serums and vaccines are obtained.

Are the funds and administration adequate? If not, find out why.

Watch our medical legislation next year. Consult 1933 March State Medical Journal for references.

—Mrs. C. W. Pollard, Omaha, Chairman.

[illegible]EBRASKA RADIOGRAPHERS SOCIETY

[illegible]braska Society of Radiographers, an affiliat[illegible]he National Society, was organized in 1931 as a result of the untiring efforts of Sr. M. Liberia, the first president, to establish such an organization. The primary purpose of the society is to promote the art and science of radiography, and to this end monthly meetings are held at which all matters pertinent to the work are discussed and the need of national registration as a means of raising the standards of ethics and workmanship stressed. We are very grateful to the radiologists and other members of the medical profession who have so generously given us their time and support during the three years of our existence in order that we might attain these standards.

On Monday, November 6th, our regular monthly meeting was held in the Medical Arts Auditorium, Omaha. Dr. A. F. Tyler presented a very interesting collection of films and pictures made in the days when x-ray was in its infancy. A group of photographs and x-ray reprints of bone tumors were displayed by Miss Molly Kirk, followed by a round table discussion of problems met by the various technicians. Miss Mary Potts, Physical Therapist, gave a most instructive talk on the application of physical therapy in infantile paralysis.

A dinner is to be given at the Lincoln Hotel, Lincoln, Nebraska, on Monday, December 4th, at 7 p. m. All are cordially invited to attend.

THE SOCIETIES

A regular meeting of the **Omaha-Douglas County Medical Society** was held October 24, president Hamilton in the chair.

Dr. H. L. Updegraff of Hollywood, California, former Omahan, guest speaker of the evening, talked on "Reconstruction of the Burned Face." His lecture was illustrated by a moving picture film.

This was a joint meeting with the Woman's Auxiliary of the Omaha-Douglas County Medical Society and Mrs. George Neuhaus, president of the Auxiliary, spoke briefly, giving a history of the organization, outlining their plans for this year, chief of which is to stress health education.

Dr. Homer Anderson, superintendent of Omaha schools, talked of the problems of the public schools.

Dr. Fred Langdon talked on the "Aims of the Auxiliary."

The members were invited to come to the 17th floor where the ladies were serving refreshments. Most of the the members accepted the invitation, and an enjoyable evening was had by all.

"What We Know About Pneumonia" was discussed by eight physicians at the semi-monthly meeting of the **Omaha-Douglas County Medical Society,** in Medical Arts auditorium.

Dr. Frank Conlin gave a paper on "Etiology and Treatment of Pneumonia." Dr. J. R. Kleyla then discussed the paper. Dr. J. W. Duncan discussed Dr. J. A. Weinberg's paper, "Surgical Treatment of Complications Following Pneumonia."

Dr. H. B. Hunt discussed "Radiographic Aspects of Pneumonia and Complications'"; Dr. W. B. Moody, "Serology of Pneumonia"; Dr. A. S. Rubnitz, "Laboratory Aids in Diagnosis and Treatment of Pneumonia," and Dr. J. P. Tollman "Unrecognized Pneumonia."

The meeting of the **Madison-Six County Medical Society** was held at the Horst Hotel, Madison, November 21, over a chicken dinner, upwards of fifty physicians [illegible] Dr. F. L. MacQuiddy, [illegible]

unusual cases of uterine hemorrhage during the puerperium, in both of which there were found uterine tumors—possibly submucous fibroids.

A meeting of the **Eighth Councilor District Medical Society** was held at Lynch, October 25. The Benedictine Sisters of the Sacred Heart Hospital served a 6:30 dinner, after which the following program was given: Paper on "Botulism," Dr. Green, Niobrara; discussion by Dr. R. E. Kriz, Lynch; discussion on "Third Stage of Labor," by Dr. Douglas, Atkinson; x-ray studies on "Carcinoma of the Stomach," by Dr. French, Page.

A paper on "The Clinical Value of the Electrocardiograph," by Dr. Edmund G. Zimmer, pathologist in St. Elizabeth's hospital at Lincoln, and a discussion on "Diagnosis of Kidney Lesions," with particular reference to use of the dyes, featured a scientific meeting of members of the **Tri-County Medical Society,** October 26, at the St. Francis hospital, Grand Island. At the business session, Dr. W. D. McGrath, as the society's delegate, submitted his report on the Nebraska convention, held recently at Omaha. More than a score of members were in attendance.

At the 13th annual meeting of the **Seventh Councilor District Medical Society** held at the Mary-Etta hotel, Fairbury, October 20, Dr. D. C. Stanberry, of Geneva, was elected president; Dr. R. Decker, Byron secretary-treasurer, and Dr. H. E. Potter, Fairbury, was re-elected councilor.

About 65 physicians and surgeons were present from the counties of Jefferson, Thayer, Nuckolls, Clay, Fillmore and Saline, comprising this district, and also visiting physicians from Omaha and North Platte.

The **Otoe County Medical Society** met at St. Mary's hospital, Nebraska City, following a dinner, November 13. Dr. Richard Young, Omaha, read a paper on "Pernicious Anemia" and H. N. Boyne, D. D. S., spoke on "Early Diagnosis of Oral Pathology."

LANCASTER COUNTY MEDICAL SOCIETY PROGRAMS AND CALENDAR

December 5, 1933

President's Guest.

December 19, 1933

Annual Business Meeting.

January 2, 1934

Clinical Case Reports.

"The Psychic Factor in the Etiology of Tuberculosis," Dr. Miles J. Breuer.

"Rats—A Satisfactory Technique for Early Pregnancy Tests," Drs. R. A. Warner and Grace Loveland.

January 16, 1934

Ladies' Night.

February 6, 1934

Clinical Case Reports.

Symposium—"Anemia":

- Classification of Anemias, Dr. E. B. Reed.
- Special Types of Anemias, Dr. Miles J. Breuer.
- Anemias in Pregnancy, Dr. H. S. Morgan.
- Anemias in Infancy, Dr. E. W. Hancock.
- Treatment of Anemias, Dr. J. C. Thompson.

February 20, 1934

Report of Delegate of A. M. A. to "Second International Goiter Conference," Dr. Chas. H. Arnold.

"Management of Abortion," Dr. H. E. Harvey.

March 6, 1934

Clinical Case Reports.

"What About Mental Cases?" Dr. Benj. F. Bailey.

"A Case of Paget's Disease," Dr. F. M. Andrus.

March 20, 1934

Clinical Case Reports.

Symposium—"Toxic Goitre," Dr. D. C. Hilton.
- Preparation to Reduce Surgical Risk, Drs. Floyd Rogers, E. G. Zimmerer, C. F. Andrews.
- Adaptation of the Operative Procedure to the Case, Dr. Harry Everett.
- Post Operative Care and Complications, Dr. J. Stanley Welch.
- End Results, Dr. Roy Whitham.

April 3, 1934

Omaha Night (Neurological Meeting).

April 17, 1934

Clinical Case Reports.
"Electrocoagulation of Tonsils," Dr. L. C. Knight.
"The Local Pollen Problem," Dr. G. R. Underwood.

May 1, 1934

Clinical Case Reports.
"Fixed Traction With Kirschner Wires in the Plaster Cast Treatment of Fractures," Dr. J. E. M. Thompson.
"The Symptomatology and Treatment of Errors of Refraction," Dr. John Peterson.

HUMAN INTEREST TALES

Dr. W. F. Sercl, former Lincolnite has located at Wisner.

Two sisters, registered nurses, are opening a hospital at O'Neill.

Dr. A. T. Robertson, formerly of Ogallala, has located at Lusk, Wyo.

Dr. H. S. Andrews, Minden, spoke recently before the local Rotary club.

Dr. C. P. Jeffers, formerly of Fontanelle, Iowa, has located at David City.

Dr. G. W. Reneker, Falls City, recently made a business trip to Montana.

Dr. and Mrs. L. D. McGuire, Omaha, had a month's outing in Wyoming, this fall.

Dr. Amy Chapman, Franklin, underwent a major operation at Hastings recently.

Dr. W. S. Bartholomew, formerly located at Lebanon, has moved to Manganola, Colorado.

Dr. E. B. Banister, former Omahan, is now located at Appleton, Wis., associated with the Appleton clinic.

The association of Dr. Chester M. Nelson, formerly of Seattle, with Dr. F. A. Brewster, Holdrege, is announced.

A medical kit was stolen from the car of Dr. Frank Casey, Omaha, while the car was parked in front of his home.

Dr. J. G. Marron, Brainard, made a trip to Los Angeles in the latter part of October and first of November.

Dr. D. L. Abbott, Sidney, has gone abroad for postgraduate study. He will spend his time at London and Vienna.

Dr. F. W. Faulk, in practice for some time, successively at Pierce, Scottsbluff and North Platte, has located in Omaha.

Dr. J. T. Googe, late of Jackson, Miss., has been appointed head of the Lincoln health department, to take effect December 1st.

Dr. T. K. Jones, located at Geneva since July, h gone to the Foote hospital at Jackson, Mich., whe he has accepted a position.

Dr. William Shearer, Omaha, attended the Ame ican Association of Oral and Plastic Surgeons, New York City, in November.

Dr. Dora Judkin-Davies of Ingleside State Ho pital, spent three weeks in observation work at Co orado Psychopathic hospital recently.

The Nebraska Medical Women held an outdo meeting and picnic dinner at the Gretna State Fis eries the latter part of October.

Dr. Roy D. Sinclair has located at Overton. Dr. John Grier, who had made arrangements to locate at Overton, remained with his work in Omaha.

Mrs. G. O. Remy, wife of the veteran physician of Ainsworth, passed away October 23, and the profession sympathizes with the bereaved Doctor.

Dr. H. W. Orr, Lincoln, attended a series of conferences with Dr. A. Steindler, at Iowa City, in honor of Professor Vittorio Putti of Bologna, Italy.

Dr. John T. Myers, Omaha, spoke before a meeting sponsored by the Woman's Auxiliary of the Dodge County Medical society on "Public Health Work."

Dr. John P. Gilligan, Nebraska City, was one of the victims of the Nebraska City bank robbery, in October, being kidnaped and carried out of town by the robbers in their flight.

Bushnell, without a physician for many months, showed their appreciation by giving a newly-located one a reception sponsored by the Parent-Teacher's Association. His name is Wernitznig.

Dr. D. D. Stonecypher, physician to the School for the Blind, Nebraska City, spoke on the "Prevention of Blindness" before a meeting at Falls City, sponsored by the Woman's club, November 8.

Dr. T. J. Kerr, North Platte, made a trip to the Kaibab forest in Arizona and brought back the deer for the venison dinner tendered the joint meeting of Medics and Dentists of the Western Nebraska Clinical Assembly.

Dean Bryan M. Riley, of Creighton Medical College, attended the meeting of the Association of American Medical Colleges at Rochester, N. Y., the last of October and first of November. Dr. H. F. Gerald accompanied him.

Improvement of child environment as an important step in preventing future criminals was explained by Dr. J. M. Reinhardt of the University of Nebraska in an address before the Knife and Fork club recently at the Lincoln hotel.

FACE THE SUNLIGHT

When the heavy cares and worries come to overcloud the day,
When your feet grow tired and painful in the rough and rugged way,
When the friends you love are absent and the whole world seems unkind,
Weary pilgrim, face the sunlight and the shadows fall behind.
When the burdens seem too crushing and you bear a heavy cross,
When the battle goes against you and you suffer heavy loss,
When a sorrow sends a heart-break, pain and torture dull the mind,
Heart of battles, face the sunlight, and the shadows fall behind.
Face the westward with its glowing, leave the storms that you have met,
Bury deep the forms of failure, and their piercing pain forget,
Face the gleam of hope and promise, son a treasure you will find;
If you always face the sunlight, then the shadows fall behind.

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THE ROBINSON CLINIC

Alcolholism may be divided into acute and chronic types. Most of the acute cases do not require medical care, but occasionally too much alcohol or poisonous liquors are taken and then expert attention is required. Poisons—methyl alcohol, etc.—usually act so quickly after the first symptoms are noticed, that supportive treatment is all that is left.

Overdoses of alcohol require heroic measures. The stomach should be lavaged, sedatives given to control the delirium and large doses of 50% Glucose solution should be injected intravenously, to control the cerebral oedema; withdrawal of alcohol should be gradual. Chronic alcoholism usually must be treated in a Hospital under skilled hands. Three to four weeks are required. The psychic background of the patient must be considered and, for this reason, morphine must not be used to control these patients. The intake of alcohol is gradually reduced and when withdrawal is completed and symptoms have disappeared, a thorough cleansing of the patient's system is indicated. Then rest and tonic treatment will usually return the patient to his family in the above stated time.

Alcoholism is a serious problem because of the economic loss to the patient. There are few businesses where an alcoholic can prosper. But, the profession should remember that there are some individuals who attain their success because of their alcoholism, not in spite of it. These men should not be interfered with and careful judgment on the part of the physician is required in selecting his cases.

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